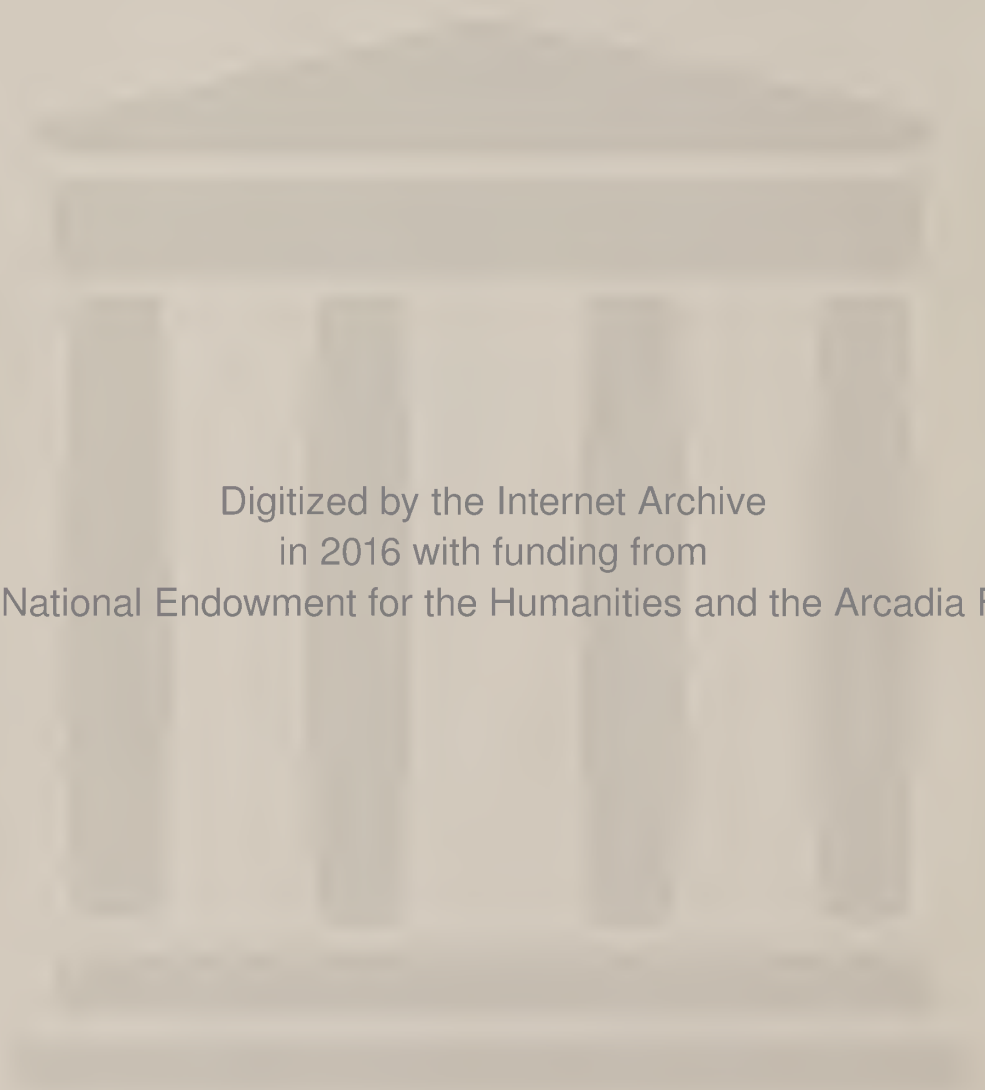


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Virginia Medical Monthly

Official Publication of the Medical Society
of Virginia



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January, 1938—December, 1938

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VIRGINIA MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA
69th Annual Meeting, Medical Society of Virginia, Danville, Fall 1938

Vol. 65, No. 1
WHOLE No. 1027.

RICHMOND, VA., JANUARY, 1938

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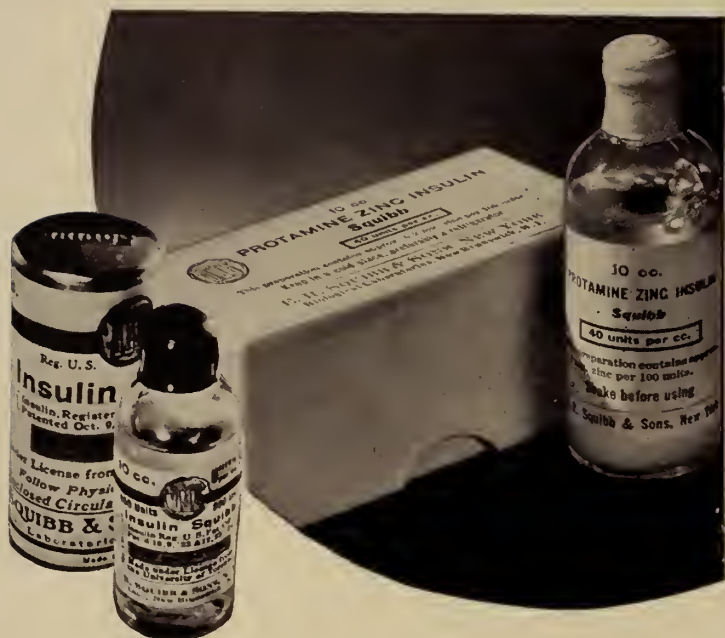
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Virginia Medical Monthly

Official Publication of the Medical Society of Virginia

Vol. 65, No. 1
WHOLE No. 1027.

RICHMOND, VA., JANUARY, 1938

\$2.00 A YEAR
25 CENTS A COPY

SCIENCE IN THE OLD DOMINION.*

AUSTIN H. CLARK
Smithsonian Institution
Washington, D. C.

Just one hundred and fifty years ago this week, on December 12, 1787, a Richmond newspaper, the *Virginia Independent Chronicle*, carried an extended notice of the first American edition of "Notes on the State of Virginia," by Thomas Jefferson. This great work may be said to have marked the end of the Colonial period in Virginian science.

At the beginning of that period, in Elizabethan times, Galileo was still a student at the University of Pisa, Tycho Brahe had just completed his observatory, and Paracelsus and Agricola only recently had died. Such was the background upon which rested the first scientific work done in connection with Virginia.

Scientific interest in connection with Virginia antedated the establishment of the first permanent settlement. Long before any English colonists were sent to America, in the days when Virginia embraced all the known territory between French Canada and Spanish Florida, the people of England were anxious to learn all they could regarding the wonderful New World, and to see with their own eyes its strange animals, plants, and other natural products, of which more or less fantastic accounts had reached Europe, chiefly through Spanish and French sources.

In deference to this popular desire, and to satisfy his own curiosity, Sir Walter Raleigh, on sending out his second expedition to Virginia under the command of his cousin Sir Richard Grenville in 1585, appointed as geographer to the expedition Thomas Harriott. Mr. Harriott was a mathematician and astronomer, one of the foremost scholars of his time, and the first man of science to visit the Americas. He had graduated from Oxford in 1580 and soon

afterwards had entered Raleigh's family as a teacher of mathematics.

He was commissioned by Raleigh to report upon the natural products of Virginia. After his return to England he made the acquaintance, through Raleigh, of Henry Percy, Earl of Northumberland, well known as a generous patron of men of science, who granted him a pension of £120 a year.

In 1588 Harriott published a "Briefe and True Report of the New Found Land of Virginia" in which he described the Indians and their customs and mentioned eighty-six kinds of birds and twenty-eight kinds of mammals, as well as various kinds of aquatic creatures and vegetable products.

At that time silk was one of the leading luxurious necessities of the aristocratic English, so it was natural that he should discourse upon the native silk-worms at some length. He wrote:

Worme Silke: In manie of our iourneyes we found silke wormes fayre and great; as bigge as our ordinary walnuttess. Although it hath not beene our happe to have found such plentie as elsewhere to be in the countrey we haue heard of; yet seeing that the countrey doth naturally breede and nourish them, there is no doubt but if art be added in planting of mulberry trees and others fitte for them in commodious places, for their feeding and nourishing; and some of them carefully gathered and husbanded in that sort as by men of skill is knowne to be necessarie; there will rise as great profite in time to the Virginians, as thereof doth now to the Persians, Turkes, Italians and Spaniards.

He was the first English convert to the habit of tobacco smoking, to which habit he attributed the superior healthfulness of the Indians. He said:

And as by sucking it through pipes of clay they purged all gross humours from the head and stomach, opened all the pores and passages of the body, preserv-

*Founders' Day Address, Medical College of Virginia, Richmond, December 7, 1937.

ing it from obstructions or breaking them, whereby they notably preserved their health, and knew not many grievous diseases, wherewith we in England are often afflicted.

The fact that Thomas Harriott was sent to Virginia by Raleigh does not seem so surprising when we remember that Sir Walter was more or less of a scientific man himself. It is recorded that during his incarceration in the Tower of London from 1603 to 1616 he devoted himself to chemical experiments as well as to literary work.

In accordance with the wishes of Queen Elizabeth, and, indeed, by her direction, John White (or With) also accompanied this expedition as artist. A third member of the expedition interested in scientific matters was Thomas Glover, a surgeon and a close observer of Indian customs.

White again visited Virginia in 1587, this time as governor of the third group of colonists to be sent over. During his stay in Virginia he made numerous water color drawings of the Indians, and of many kinds of plants, birds, fishes, insects, and other forms of life. One hundred and twelve of his sketches are preserved in the British Museum. Copies of several of Captain White's pictures were published by Theodore de Bry in 1591, and a woodcut of a painting by him of a butterfly was published by Thomas Moufet (or Moffett) in 1634. This was the first insect to be described from North America. The drawing, now in the British Museum, represents a yellow female of the common yellow swallowtail (*Papilio glaucus*). It is labeled "Mamank anois" which, according to William Strachey, was the local Indian equivalent for butterfly.

Curiosity in regard to the natural products of Virginia was very general in England, and even the kings were anxious to secure specimens of the strange animals and plants for their personal cabinets. The State Papers of Great Britain contain many entries of interest in this connection. King James I, who had been imbued with a genuine interest in learning by his principal tutor, George Buchanan, was an enthusiastic collector. On December 15, 1609, the Earl of Southampton wrote to the Earl of Salisbury that he had told the King of the Virginia squirrels brought into England that were said to fly. The King very earnestly asked if none were provided for him—whether Salisbury had none for him—and said he was sure Salisbury would get him one. The writer apologized for troubling Lord

Salisbury, "but," he continued, "you know so well how hee is affected to these toys. . . ."

It was James I who made the first determined effort to establish the silk industry in Virginia. As early as 1609 he sent to the Colony silk-worm eggs and mulberry trees. The first shipment was lost through shipwreck, but later shipments arrived safely.

In 1615 Ralphe Hamor, who had succeeded William Strachey as Secretary of the Virginia Colony, published notes on various native animals. Among others, he described the flying squirrels and opossums, and he remarked on the enormous numbers of wild pigeons. Concerning silk-worms he wrote:

The silke wormes sent thither from England, in seeds the last winter, came forth many of them the beginning of *March*, others in *Aprill*, *Maye*, and *June*, thousands of them growne to great bigness, and a spinning, and the rest well thriving of their increase, and commodity well knowne to be reaped by them, we haue all most assurance (since sure I am) no Country affordeth more store of *Mulberry* trees, or a kind whose leafe they more delight or thriue better.

Applied science, at least experiments in applied science, has its beginning in Virginia, according to Mr. Hamor, in 1612. It was John Rolfe who perfected a method of curing tobacco so that it would reach England in good condition. But generally speaking in colonial times applied science was discouraged. England did not look with favor on the development of manufacturing abroad. The colonies were regarded as markets for, not producers of, manufactured articles.

It is interesting to note that as early as 1617 Samuel Argall mentioned that "ground wore out with maze will bring English grain"—in other words, the idea of a succession of crops was beginning to take form.

In these early colonial days commerce was uppermost in the minds of most people. Stimulated by the example set by the Portuguese and Spanish, England looked upon her colonies as children whose duty it was—or at least ought to be—to supply her with certain commodities otherwise obtainable only from foreign countries at high prices. To Virginia she looked especially for silk and wines.

So for many years, indeed all through colonial times, pamphlets and books urging the Virginians to grow silk and explaining to them the benefits that would result from following this course were sent

to the Colony. In 1622 King James I, with the approval of the Earl of Southampton, even ordered the setting up of silk works and the planting of vines; neglect to plant vines and mulberry trees was to be punished. It seemed to be incomprehensible in England that the colonists should neglect grapes and mulberry trees in favor of a "smoakie Witch" against which the King himself in 1616 had published a "Counterblast to Tobacco."

The determination of the English to cajole or force the Virginians to raise silk, and the equal determination of the Virginians to raise what they pleased in spite of periods of economic distress resulting from recurrent overproduction, gave rise to a considerable volume of more or less scientific literature on silk-worm culture, largely compiled, though much of it original. One of the most persuasive of the books on silk-worm culture, entitled "The Reformed Virginian Silk-Worm" published in London in 1655, attempted to show the Virginians that silk-worm culture required "neither cost, labour, or hindrance in any of their other employments whatsoever." And it went even further, suggesting that as "there is neither Art, Skill, or Pains in the thing" there were hopes that Indians might undertake it and as a result be enabled to purchase English goods.

In the first quarter of the seventeenth century the treasurer or governor of the Virginia Company was Henry Wriothesley, third Earl of Southampton, noted for his activities as a colonizer and his interest in exploration, though best known as a friend and patron of Shakespeare. So we are not surprised to find references to exploration and colonization and to the increasing interest in science in Shakespeare's works.

The suggestion for the plot of "The Tempest," published in 1623, the year before Lord Southampton's death, was probably furnished by Sylvester Jourdan's account of the shipwreck of Sir George Somers on the Bermudas, or some other contemporary narrative of Virginian colonization. It is adapted from the tales brought back by explorers from distant lands and their stories of wild men and strange gods. It has been pointed out that the ideal commonwealth suggested by Gonzalo, though based upon Florio's translation of Montaigne's essays, bears a striking resemblance to conditions in the Virginia colony as portrayed in a letter from William Strachey dated July 15, 1610.

The interest in strange men of distant lands is well brought out by Trinculo's remarks when he first catches sight of Caliban (Act II, Scene ii):

What have we here? a man or a fish? dead or alive?
A fish: he smells like a fish; a very ancient and fish-like smell; a kind not of the newest Poor-John. A strange fish! Were I in England now, as once I was, and had but this fish painted, not a holiday fool but would give a piece of silver: there would this monster make a man; any strange beast there makes a man; when they will not give a doit to relieve a lame beggar, they will lay out ten to see a dead Indian.

All gentlemen of this period were supposed to have an interest in natural history as an integral part of their general culture, and many of the aristocrats of the time were enthusiastic collectors. Among these was George Villiers, Duke of Buckingham. John Tradescant, gardener to King Charles I, wrote in 1623 to one Nicholas that it is the Duke of Buckingham's pleasure that he should deal with all merchants from all places, but especially from Virginia, Bermudas, Newfoundland, Guinea, the Amazons, and the East Indies for all manner of rare beasts, fowls, and birds, shells and shining stones, etc.

In the domestic correspondence of Charles I, under the date of July 1625, there is a note of one Jeremy Blackman's charge, in all £20, for transporting four deer from Virginia, including corn and a place made of wood for them to lie in. Charles I sent John Tradescant the younger, the son of his gardener, to Virginia in 1637 "to gather all rarities of flowers, plants, and shells."

Heretofore the work done on the natural history of Virginia had consisted mainly of descriptions of the natural products of the land, chiefly the plants and more conspicuous birds and other creatures of the coastal plain, by untrained observers whose main preoccupation had been along other lines, combined with the sending back to England of some of the more interesting and less perishable things. These, preserved in cabinets as curios, attracted much attention.

In those days science was almost wholly included in the subject of theology, and scientific work was restricted within narrow bounds by the dogmas of the theologians. In the words of the Marquess of Salisbury science

was the knowledge gained not by external observation, but by mere reflection. The student's microscope was turned inward upon the recesses of his own brain; and

when the supply of facts and realities failed, as it very speedily did, the scientific imagination was not wanting to furnish to successive generations an interminable series of conflicting speculations.

For some time there had been a growing restiveness against the restrictions placed on scientific investigations by the theologians. As early as the reign of Charles I, about 1645, there existed in England an organization referred to by the Hon. Robert Boyle, seventh son of the first Earl of Cork, as the "Invisible College." This "Invisible College" was first suggested by Theodore Haak (or Hank), a German of the Palatinate then resident in London. It consisted of weekly meetings at which the results of experimental work in philosophy—in its broad sense—were discussed. This was a rather unorthodox procedure for the time, but those who attended the meetings were among the ablest men of England, and included theologians as well as others. One of them was Dr. John Wilkins, afterwards Bishop of Chester, who had married Robina, sister of Oliver Cromwell. Another was Christopher Wren, who laid down the plan for the College of William and Mary.

According to Dr. Cromwell Mortimer

had not the Civil Wars happily ended as they did, Mr. Boyle and Dr. Wilkins, with several other learned Men, would have left England, and, out of Esteem for the most excellent and valuable Governor, John Winthrop the younger, would have retir'd to his new-born Colony [Connecticut] and there have establish'd that *Society for promoting Natural Knowledge*, which these Gentlemen had formed, as it were, in *Embryo* among themselves.

Emigration to America was, however, forestalled. On November 28, 1660, the "Invisible College" became visible as "The Royal Society of London for Improving Natural Knowledge." On the Wednesday following word was brought that King Charles II approved the design of the meetings; in October, 1661, the King offered to be entered one of the Society; and in the next year the Society was incorporated under the name of the Royal Society, the first charter of incorporation passing the Great Seal on July 15, 1662.

Although the Royal Society remained in England, the College of William and Mary and Harvard both received considerable amounts from the estate of Mr. Boyle after his death in January 1691-'92.

Science now began to take on a new aspect. Charles II had in effect decreed that there is nothing

irreligious in reporting facts. So records of observed facts and their interpretation in the light of other facts began to supersede introspection in which the aid of facts was regarded as superfluous, combined with interminable commentaries on the works of Aristotle.

Thus it naturally came about that what had heretofore been regarded chiefly as strange and anomalous curiosities of the New World began to receive the attention of earnest students who sought to allocate them in their proper place in Nature's scheme.

The development of the study of the sciences in Virginia was undoubtedly assisted materially by the freedom of thought that prevailed in the Colony. Ever since the creation of the first Legislative Assembly in 1619 Virginians had been accustomed to think for themselves, and at the same time to be tolerant of the ideas of others. The scattered nature of the settlements and the absence of large towns also conduced to the fostering of that originality which is an essential accompaniment of scientific progress.

At this time the Colony had greatly increased in size, and life had become relatively easy and comfortable. It was now that the Virginia Assembly attempted in various ways to stimulate the manufacture of cloth, the tanning of leather, and various other forms of industry involving applied science. But these efforts came to nothing, largely because of opposition by the English merchants. So the outstanding scientific developments of the period were mainly in the field of natural history.

The opportunity afforded local residents for an intensive study of the fauna, flora, and geology of Virginia—because of her loyalty gratefully called by Charles II the "Old Dominion"—opened up a new era in the development of science in the Colony, coinciding with the beginning of the era of descriptive science elsewhere.

Among the earliest and ablest representatives of this new school of descriptive science in America were the Claytons, Bannister, and Mitchell of Virginia.

The Rev. John Clayton, rector of Crofton, at Wakefield, in Yorkshire, made a journey to Virginia in 1685, and in 1688 communicated to the Royal Society an essay on the natural history of the region which was the most important account published up to that time. At about this time Thomas Glover published an account of Virginia in which he dis-

cussed the natural history of the Colony after the manner of Wood and Morton in New England.

The Rev. John Bannister, a clergyman of the Church of England born at Twigworth, Gloucestershire, in 1650, came to Virginia before 1678 and in addition to his clerical duties applied himself assiduously to the study of natural history. He was the first to make a really scientific study of the insects and mollusks of North America. He corresponded with Sir Hans Sloane, Martin Lister, Ray, Compton, and others, and furnished them with specimens or descriptions of local animals. His catalogue of plants observed in Virginia printed in 1686 was the first systematic paper on natural history emanating from America. His notes on the insects and mollusks were transmitted to the Royal Society by James Petiver and were published in the "Philosophical Transactions."

Bannister had in his possession and exhibited to an English traveler in 1686 large bones and teeth of fossil mammals from the interior of Virginia, the first of which we have any record from North America. He was described by John Lawson in his history of North Carolina as "the greatest virtuoso we ever had on this continent." Ray referred to him as "erudissimus vir et consummatissimus," and Lister said that he was "a very learned and sagacious naturalist."

Dr. Harry B. Weiss has recently called attention to the existence in the Library of Congress of a facsimile of an old notebook written in Virginia "entitled 'Collectio insectorum et aliarum rerum naturalium in Virginia.' In addition to including a list of trees and plants of Virginia, a discussion of shells, suggested regulations for governing the conduct of clergymen sent out to Virginia, etc., it contains also some miscellaneous biological notes on various insects, listed by genera. The writer mentions 'dirt wasps,' bees 'who eat their way into hard wood,' cockroaches which overrun the larders, fire flies, butterflies, flies, cicadas, beetles, etc. The handwriting of the notebook is small and cramped, and up to the present time it has not been completely translated." Dr. Weiss remarked it would not be surprising if this Latin notebook by an unknown clergyman proved to be written by John Bannister.

The energetic, learned, and versatile Col. William Byrd made many interesting observations on the Indians and on the general natural history of Virginia. In 1694 he carried to England a female opos-

sum that furnished the material for the first dissertation upon the anatomy of the marsupials.

Col. Byrd was an excellent observer as well as an unusually lucid and entertaining writer. Speaking of the region on the North Carolina line just west of the Great Dismal he wrote on March 26, 1728, that

very often, in autumn, when the apples begin to ripen they are visited with numerous flights of paroquets, that bite all the fruit to pieces, for the sake of the kernels. The havoc they make is sometimes so great, that whole orchards are laid waste in spite of all the noises that can be made, or mawkins that can be dressed up, to fright them away. These ravenous birds visit North Carolina only during the warm season, and so soon as the cold begins to come on, retire back toward the sun. They rarely venture so far north as Virginia, except in a very hot summer, when they visit the most southern parts of it. They are very beautiful; but like some other pretty creatures are apt to be loud and mischievous.

Col. Byrd is reported to have killed buffaloes in 1729 south of Roanoke on the boundary between Virginia and North Carolina, and Wilson writes "On his expedition against the Cherokees, about 1760, Col. William Byrd led his troops through Smyth. He spent much time improving the Buffalo Trail into a wagon road. This, the first road building in the county, was done at government expense."

John Clayton, the naturalist, accompanied his father, John Clayton, who was later Attorney General for the Colony, to Virginia in 1705. He was Clerk of Gloster (now Gloucester) County for fifty-one years. His botanical papers, and especially his "Flora Virginica" edited by Gronovius and Linnaeus, are well known. Peter Collinson, the famous English botanist, referred to him as "my friend John Clayton, the greatest botanist of America." Jefferson maintained that Clayton was a native of Virginia. These two John Claytons, father and son, must not be confused with an earlier John Clayton, previously mentioned.

Mark Catesby lived in Virginia from 1712 to 1721, making collections and paintings of plants and animals, particularly birds. He subsequently published a magnificent work in two large volumes on the natural history of Carolina, Florida, and the Bahamas.

Dr. John Mitchell, born in England about 1680, settled at Urbanna in Middlesex County where he remained for nearly fifty years practicing medicine

and promoting science. His dissertation on the elements of botany and zoology dated Virginia, 1738, and published in Nuremburg in 1748, was the first work on the principles of science ever written in America. His fame rests chiefly upon his investigations into the yellow-fever epidemic of 1737-'42 which were published after his death.

There were various other students of the natural history of Virginia at this period. Among them were Dr. John Tennent of Port Royal, who published some papers on botany, in particular one printed at Williamsburg in 1736 on the virtues of the Seneca snake-root in reference to pleurisy, and Dr. Graham of Dumfries, also a botanist, to whom, according to Jefferson, we are indebted for the introduction of the tomato.

Gentlemen with a keen interest in science were now becoming numerous in Virginia, as well as in the neighboring Colonies. Benjamin Franklin was the first to see the advantage of an organization which would afford those interested in science opportunity for meeting each other and for interchanging ideas. In 1743 he issued a circular entitled "A Proposal for Promoting Useful Knowledge among the British Plantations in America" in which it was urged that a society should be formed of virtuosi or ingenious men residing in the several Colonies to be called "The American Philosophical Society." In a letter to the Hon. Cadwallader Colden of New York dated April 5, 1744, he wrote that

.... [I] can now acquaint you that the Society, as far as relates to Philadelphia, is actually formed and has had several meetings . . . and there are a number of others in Virginia, Maryland, Carolina, and the New England colonies who we expect to join us assoon [*sic*] as they are acquainted that the Society has begun to form itself.

The time was not yet ripe for the formation of a society of this kind, and the original American Philosophical Society soon languished and all but died. The idea of the desirability of closer association between those interested in science was, however, beginning to take root.

Col. Francis Fauquier, a devotee of the sciences and a Fellow of the Royal Society, came to Virginia as Lieutenant Governor in 1758. In the same year Dr. William Small came to Williamsburg as professor of mathematics and natural philosophy in the College of William and Mary. President L. G. Tyler of William and Mary wrote that Col. Fauquier and Dr. Small

delighted in the society of young men, and at Fauquier's table, where Small was a constant attendant, the youths of Virginia—Jefferson, Page, Walker, McClurg—learned their lessons in the rights of man. . . . Jefferson, by nature a scientist himself and no mean inventor, referred to Dr. Small as the man who "fixed the destinies of his life," and John Page eulogized him as "the illustrious professor of Mathematics, the great Dr. Small, of Birmingham, the darling friend of [Erasmus] Darwin". . . . Besides being "the darling friend" of Erasmus Darwin, he was the intimate friend of James Watt.

Though thoroughly loyal to the Crown, Virginia was now developing a considerable degree of independence; she was beginning to regard herself as a sister, rather than as a child, of England. Her scientific men were less inclined to look to England for leadership, preferring instead to cooperate among themselves and with their colleagues in other colonies. Furthermore, the application of science to the improvement of manufacturing processes was beginning to receive serious attention.

The "Society for the Promotion of Manufactures" was formed at Williamsburg in February, 1759. This society was authorized by the General Assembly to offer bounties for discoveries and improvements in manufacturing processes. Because large sums were drained from the Colony for foreign wines and silks, this body offered £500 as a premium to any person who should, in any twelve months within eight years, make the ten best hogsheads of wine; and there was a second prize of £100 for the second best sample.

At this period training in the natural sciences was to be had almost exclusively in medical schools. Among the various medical schools that at the University of Edinburgh, in Scotland, was perhaps the favorite with the young men of America, especially of Virginia. Between 1749 and 1812 sixty-five Virginians attended this school. In 1761 there were enough young Virginians at Edinburgh to permit the establishment there of a Virginia Club, the object of which was the improvement of its members' knowledge of anatomy. The members of the Virginia Club were primarily interested in medicine, but some of them on their return to the Colony devoted themselves more or less intensively to science, and their names became prominently identified with the scientific life of the Colony.

In 1766 a new organization was formed under the title of "The American Society for Promoting and Propagating Useful Knowledge, held in Philadel-

phia." Benjamin Franklin, although absent in England, was elected its president, and the society entered upon a very promising career. In 1768 it changed its title to "The American Society held at Philadelphia for Promoting Useful Knowledge."

In the meantime, the few surviving members of the first "American Philosophical Society" formed under the old name an essentially new organization. The membership of this new organization included many of the most influential and wealthy colonists, and the energetic manner in which it organized a plan for the observation of the transit of Venus in 1769 gave it at once a respectable standing both at home and abroad.

In 1769, after negotiations that occupied nearly a year, these two societies were merged, and the "American Philosophical Society held at Philadelphia for Promoting Useful Knowledge" has from that time until now maintained an honorable position among the scientific organizations of the world. The first volume of its publications appeared in 1771 under the title of "The American Philosophical Transactions." Franklin was president of the society until his death in 1790. He was at the same time President of the Commonwealth of Pennsylvania and a member of the Constitutional Convention, and his eminence secured for the society greater prestige than would otherwise have been obtainable—indeed the society soon assumed national importance.

This society played an important part in the scientific life of Virginia. Between 1768 and 1800 eighteen Virginians were elected to membership. The first of these, elected on January 26, 1768, was Dr. Arthur Lee who had previously been an outstanding member of the Virginia Club at Edinburgh.

In order fully to appreciate the high regard in which science was held by the people of Virginia at this time, and the diversity of the lines of scientific interest, it is desirable to review the participation of Virginians in the proceedings of the American Philosophical Society. The Virginians who were members of this society were:

Richard P. Barton, elected January 20, 1792.
Col. Landon Carter, elected April 21, 1769.
James Greenway, M. D., elected April 18, 1794.
His Excellency Thomas Jefferson, listed in 1786.
Dr. Walter Jones, elected January 21, 1774.
Arthur Lee, M. D., elected January 26, 1768.
Francis Lee, listed in 1770.
Rev. Dr. James Madison, elected January 22, 1785.

James McClurg, M. D., elected January 21, 1774.
Dr. Hugh Mercer, listed in 1770.
Hon. Mann Page, listed in 1786.
Mr. Christian Frederick Post, listed in 1770.
Thomas Mann Randolph, elected April 18, 1794.
John Rouelle, M. D., elected January 20, 1792.
James Rumsay [*i. e.*, Rumsey], elected April 17, 1789.
John Stewart, elected April 21, 1797.
John Walker, listed in 1770.
His Excellency General Washington, listed in 1786.

The contributions of these gentlemen and others from Virginia were many and varied. The first contribution to economic entomology in the country was a notable memoir by Col. Landon Carter, of Sabine Hall, on "The Fly-Weevil that destroys the Wheat." This was presented to the society, through Col. Lee, on November 5, 1768. The society acknowledged themselves under great obligations to Col. Carter for the communication of the conclusions he has found (on long experience) concerning the insect's propagation and progress and the methods to be used to prevent the destruction of the wheat by it, and ordered it to be printed for the public benefit. This was done in 1771.

On March 19, 1775, Mr. R. S. Jones communicated a letter from Mr. R. Howell from Virginia about a moss used in dyeing purple, and a new silk reel; this was referred to the Committee on Husbandry and American Improvements, and the specimens were referred to Mr. Alexander for examination.

On December 17, 1779, there is recorded a letter from Rev'd Wm. Maddison [*sic*], President of William and Mary's College, containing "a series of Meteorological Observations by his Excellency Governor Jefferson and himself separately, for a year and a half; likewise a set of Experiments on what are called the 'Sweet Springs.'" Mr. Madison was thanked, and a continuance of the correspondence was requested.

In October, 1782, a specimen of Epsoms salt (?) found "fossil" in Virginia was exhibited and referred for analysis to Dr. Hutchinson.

On May 2, 1783, a letter from J. Page on the aurora of October 31, 1779, was recorded.

On October 19, 1787, a letter "on the method of cultivating cotton in Virginia" from Richard P. Barton was recorded.

On April 5, 1788, Mr. Barton presented a pamphlet by James Rumsey, of Berkeley County, Virginia, on "A plan wherein the power of steam is fully

shown by a new constructed machine for propelling boats or vessels."

On April 18, 1788, it is recorded that James Rumsey sent by letter drawings and descriptions of: (1) An improved boiler for a steam-engine; (2) An improvement in Dr. Barker's grist-mill; (3) An improvement in the saw-mill; and (4) An improvement in raising water by means of a steam-engine.

On May 2, 1788, the Committee on Inventions reported that Rumsey and Voight's principle of increasing the steam-generating surface and diminishing the quantity of water exposed to the action of fire appears just, but the best application must be a matter of experiment; and that Rumsey's other inventions were "ingenious in theory, and well deserve a full trial." On the same date there is a record of a letter from Dr. Greenway describing the Golden *Cassia*, or Peacock flower.

On March 20, 1789, Dr. George Buchanan of Baltimore sent to the Society M. Quesnay de Beaurepaire's account of the Academy of Sciences and Belles Lettres established by him at Richmond. There is no further mention of this organization.

On February 19, 1790, a letter from Dr. Greenway containing "An account of a hill on the borders of North Carolina supposed formerly to have been a volcano" is recorded, and there is also a notice of "An account of a poisonous plant growing spontaneously in the southern part of Virginia."

On February 4, 1791, astronomical observations received from Rittenhouse enclosed others by Rev. Dr. Madison, President of the College of William and Mary.

On April 15, 1791, on motion by Thomas Jefferson, a select Committee (consisting of Jefferson and four others) was appointed to collect materials for forming the natural history of the Hessian fly, and the best means for its prevention or destruction "and whatever else relative to the same may be interesting to Agriculture."

On August 19, 1791, a curious piece of Indian sculpture, supposed to represent an Indian woman in labor, found near Cumberland river, Virginia, was presented by Mr. Jefferson.

On January 20, 1792, J. Rouelle presented (per W. Barton) his "Complete Treatise on the Mineral Waters of Virginia."

On March 2, 1792, David Thomas of Loudoun County presented by letter and note two specimens of impressions of *Echinus* or sea-nettle in limestone,

presented by Mr. Peter Boyle of Georgia, per David Thomas.

On May 18, 1792, an account of some fossil shells discovered in Virginia, and additional facts concerning the Bursted Hill in North Carolina, were read out of a letter from Dr. Jas. Greenway to Dr. Barton.

On November 20, 1795, a paper on the barometrical measurement of the Blue Ridge, Warm Spring, and Alleghany Mountains in 1791, with a journal of observations by Jon. Williams, was read.

On August 19, 1796, Jefferson's letter to Rittenhouse (deceased) describing bones of extraordinary size found beyond the Blue Mountains in Virginia, "appearing to be of the Tyger-lion & Panther species" was read by Dr. Barton.

Thomas Jefferson was elected President of the American Philosophical Society on January 6, 1797. On February 10 his letter from Monticello dated January 28, "expressing in the most polite terms the sense he entertained of the Honour done him at the late election in choosing him President—with sundry other interesting particulars" was read. This letter was read again on February 17 and ordered on the minutes.

On March 10, 1797, Jefferson's memoire [*sic*] "On the Discovery of certain Bones of a Quadruped of the" [space of four lines left blank]. A resolution was passed ordering the memoir to be put in the hands of the Committee of Selection of Publications, drawings of the bones to be made by a proper person. Mr. Peale was requested to put the bones "in the best order for the Society's use."

On January 5, 1798, Jefferson was reelected President.

On January 19, 1798, Jefferson presented to the Society bones of the mammoth some time ago found in Virginia.

On April 20, 1798, Jefferson presented a hand threshing machine invented by T. C. Martin of Virginia "which he had procured to be made."

On May 4, 1798, a communication "On Magnetism" from Revd. James Madison, of Williamsburg, was referred to Dr. James. On the same date a paper on natural curiosities in Greenbriar County, "particularly of a tooth of a large non descript animal" from Mr. Beauvois was referred to Dr. Wistar. A "Description of a Mould Board of the least resistance, &c." by Mr. Jefferson was read and referred to Mr. Patterson.

On June 1, 1798, Bishop Madison's piece on magnetism was reported worthy of publication and so ordered.

On December 21, 1798, a "Memoir on the Sand Hills of Cape Henry" by H. B. Latrobe was read and referred to S. H. Smith. Mr. Latrobe intends further communications. Thanks were ordered.

On January 4, 1799, Jefferson was again elected President.

On January 18, 1799, a supplement to Mr. Latrobe's paper on the sand hills of Virginia was presented and referred to S. H. Smith, with power to print. It was reported worthy of publication on February 1, and this was agreed to.

On December 27, 1799, Jefferson was reelected President, and resolutions were passed on the death of Washington.

Before the American Philosophical Society had elected more than a very few members from Virginia there was organized at Williamsburg on November 20, 1773, "The Virginia Society for the Promotion of Useful Knowledge." The charter of this society reads:

Tis this day agreed at a meeting of the following persons that a society shall be instituted to be held at Williamsburgh this Monday after the 25 of . . . ety shall be call'd and known by the name of the Virginia Society for the Promotion of Useful Knowledge and we whose names are hereunto subscribed do agree to meet at some convenient place in Williamsburgh for forming such regulations as may be thought necessary to establish the said society, at the said appointed times. 2nd That the subjects to be discussed in the said society shall be comprehended under the following heads, viz., Geography, Natural History, Natural Philosophy, Agriculture, Practical Mathematics, Commerce, Physic, American History. 3d That no member shall be admitted in the society after this time, untill they have petition'd by themselves or some of the members now subscribing and are admitted by a majority of the members instituting this society and subscribe the terms agreed to by the society.

The signatures on the reverse side of the one page document are those of Theodorick Bland (who had formerly been a prominent member of the Virginia Club in Edinburgh), Chairman; Dabney Carr; John Page of Rosewell; Mann Page, Jr., Mannsfield; George Muter[n]; John Walker; James McClurg. John Clayton was elected the first President, and the Hon. John Page (then Lieutenant-Governor) was elected Vice-President.

John Walker was already a member of the American Philosophical Society which James McClurg joined in the year following, and Mann Page later.

The following notices regarding the activities of this society are taken from the *Virginia Gazette* published at Williamsburg.

Issue of April 21, 1774. The members of the society lately instituted for promoting useful knowledge are desired to attend at the Capital on Tuesday the 3rd of May, that being one of the Days appointed for their annual Meetings.

Issue of May 19, 1774. The Members of the Society for promoting useful Knowledge are desired to meet on Tuesday the 31st of this Instant.

Issue of May 26, 1774. The Members of the Society for promoting useful knowledge are desired to meet on Tuesday the 31st of this Instant.

Issue of June 9, 1774. The members of the Society for the Advancement of useful Knowledge are desired to meet at the Capitol on Wednesday the 15th Instant, at four o'Clock in the Afternoon.

Issue of June 16, 1774. Yesterday the Society for the Advancement of useful Knowledge met at the Capitol, when the Honourable John Page of Rosewell, was chosen President [John Clayton having died], George Wythe, Esq., Vice-President, Mr. James Madison, Professor of Natural Philosophy in the College of William & Mary, and the Reverend Mr. Robert Andrews of York Secretaries, David Jameson, Esq; Treasurer, and Mr. James Madison Curator.

A pecuniary Reward and Medal were voted to Mr. [John] Hobday [of Gloucester County] for his Model of a very ingenious and useful Machine for threshing out Wheat.

Doctor Franklin and Doctor Lettsom of London, the Reverend Thomas Baldwin, and John Baldwin, Esq; of Chester, in England, Doctor Smith, Provost of the College, Doctor Morgan, Doctor Rush, and Mr. Rittenhouse, of Philadelphia, Edward Fay, Esq; of New York, Doctor Steward of Bladensburg, Maryland, and Doctor Smibert of Boston were chosen corresponding members.

Issue of July 28, 1774. The publick would be much obliged to these Gentlemen of the Faculty, who have an Opportunity of examining into the Nature of the Distemper amongst the HORNED CATTLE (which so generally prevails at this Season of the Year) for their Opinion relative thereto, and to publish what they think the most

probable Method of relieving the Sick or preventing the Disease.

In its early years the society seems to have been well received by the people of the Colony; but after 1774 there are few published notices of it, although it appears to have kept up an organization of some sort for a considerable time.

Among the letters of Jefferson is one that he wrote in 1787 in answer to one from John Page, who had urged him to accept the presidency. Jefferson wrote that "he should feel himself out of his true place to stand before McClurg." Dr. James McClurg was probably president at that time.

John Page and Thomas Jefferson were close friends. In their student days at William and Mary their interests were very similar, and they shared their ideas and confidences. Page, who was Lieutenant Governor under Patrick Henry and later (1802-'05) Governor, spent much of his time in scientific investigations. With his friend David Jameson he was interested in astronomy, and made experiments in the accurate measurement of the fall of rain and dew. Because of his interest in astronomy, and especially his calculations of an eclipse of the sun, his friends called him "John Partridge" after the noted almanac maker in Scotland. He also suggested, as early as 1779, the identity of magnetism and electricity.

The Virginia Society for the Promotion of Useful Knowledge was beset with many difficulties arising from the disturbed social conditions attendant upon the Revolution and from other causes. Furthermore, it came into competition with the American Philosophical Society in Philadelphia, to which several of its outstanding members belonged.

Immediately after the Revolution science was in high favor among the people of Virginia. Many scattered notes testify to this. As an illustration, we read in the *Virginia Gazette* for August 22, 1777, that

On Friday last, the 15th of August, being the day of the foundation of William and Mary College, after prayer and a sermon by Mr. Madison, recommending industry in the pursuit of science, and setting forth the advantages with which it might here be prosecuted, two ovations were delivered—the first in Latin by Mr. Heath, upon the utility of sciences; the other in English by Mr. William Nelson in which he discussed, to the great satisfaction of many learned gentlemen who favored the college with their presence, the question, What form of government is most favorable to public virtue and the arts and sciences?

As an illustration of the appreciation of the importance of science on the part of the people of the State as a whole I may mention that Transylvania University in Lexington, Kentucky, was founded by an act passed by the General Assembly of Virginia in May, 1780, "to vest certain escheated lands in the County of Kentucke in trustee for a public school." The preamble states that this school was to be for the benefit of "those remote citizens, whose situation in a barbarous neighborhood and a savage intercourse might otherwise render unfriendly to science."

Jefferson's "Notes on the State of Virginia" was the first comprehensive treatise to be published on any section of the United States. In it were discussed the boundaries of the State, the rivers, the sea-ports, the mountains, the cascades, the mineral, vegetable, and animal productions, climate, population, military force, marine force, aborigines, etc. It was the precursor of the great library of more or less similar scientific reports that have since been issued by the State and Federal governments. Measured by its influence, this was the most important scientific work published in America up to this time.

The first American edition of this book was published in Philadelphia in 1788. In the *Virginia Independent Chronicle* (Richmond) for Wednesday, December 12, 1787, we read

The work will be comprised in a handsome octavo volume, with an elegant type, and good paper, and delivered to the subscribers neatly bound and lettered at the very moderate rate of one dollar. The price to non-subscribers will be seven shillings and six pence Virginia currency. . . . Subscriptions are taken in at Mr. Davis's Printing-Office in Richmond, where a specimen of the work is left for inspection.

Jefferson was always quick to defend science in all its branches against any form of disparagement. In a letter to President Madison of William and Mary College he wrote:

Speaking one day with M. de Buffon on the present ardor of chemical inquiry, he affected to consider chemistry but as cookery, and to place the toils of the laboratory on a footing with those of the kitchen. I think it, on the contrary, among the most useful of sciences and *big* with future discoveries for the utility and safety of the human race.

It was the scientific foresight of Jefferson so manifest in his letters that led him to advocate so vigor-

ously the idea that science would be the cornerstone of our Republic. In 1789 he wrote to President Willard of Harvard:

What a field we have at our doors to signalize ourselves in. The botany of America is far from being exhausted, its mineralogy is untouched, and its natural history or zoology totally mistaken and misrepresented. . . . It is for such institutions as that over which you preside so worthily, Sir, to do justice to our country, its productions, and its genius. It is the work to which the young men you are forming should lay their hands. We have spent the prime of our lives in procuring them the precious blessings of liberty. Let them spend theirs in showing that it is the great parent of science and virtue, and that a nation will be great in both always as it is free.

So far as science is concerned, the Colonial period in Virginia reached its culmination, and its end, in the personality and in the spirit of Thomas Jefferson, one of the most versatile, and certainly the most influential, of our American scientific men.

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IS SOCIALIZED MEDICINE THE NEXT STEP?

HAROLD W. POTTER, M. D., F. A. C. P.,
Newport News, Virginia

The time may not be far distant when our colleagues in the District of Columbia will appeal to us for support in their battle to prevent the legalization of social medicine.

Probably very few of the members of the medical profession in Virginia know the details of the

struggle in which the District of Columbia Medical Society is engaged at this moment.

Since about the first of November there has been in operation in Washington a form of socialized medicine bearing the name of "Group Health Association Incorporated."

Fifty thousands dollars has been allocated by the H.O.L.C. to insure its operation. Patients are being treated at the Group's clinic daily, and monies are being received according to the pre-payment plan for medical care.

This plan may be summarized by quoting from the By-Laws of the "Group Health Association Incorporated" as revised October 25, 1937.¹

"ARTICLE II.

"MEMBERSHIP

"Section 1. The Corporation shall have no capital stock but shall be an Association controlled by its members. The membership of this Corporation shall be composed solely of civil employees of the executive branch of the United States Government Service; provided, however, that in case persons other than employees of the Federal Home Loan Bank Board and agencies under its direction shall be designated as eligible for membership, such action shall first have approval of a majority of the Board of Trustees."

The above section reveals that the membership shall be civil employees of the Federal Government executive branch. The reason for the organization of the Corporation is said to have been an effort to cut down the time lost on account of illness of civil employees. It is not clear just how this Group Health Association is going to diminish time lost due to ill health, any more efficiently than private practitioners have done in the past.

What does membership in Group Health cost, and what does the member get for his payment?

I quote from Article VII of the By-Laws.¹

"DUES.

"Section 1. There shall be two classes of membership, i. e., (1) Family membership; and (2) Individual membership. Family membership shall include married or single persons with dependents as hereinafter defined, and the dues for membership of such class shall be \$3.30 per month. Individual membership shall include married or single members having no declared dependents, and the dues for membership of such class shall be \$2.20 per month."

Thus for \$39.60 per year in the first class and \$26.40 for the second class, this Association proposes to furnish an almost complete medical and hospital service to its members and their families.

The benefits which are offered to the members will be best explained by further quotations from the By-Laws.¹

"ARTICLE X.

"BENEFITS.

"Section 1. The Medical service to be rendered to members and dependents by the Corporation shall be as

follows: Medical and surgical examinations and treatments, including such examinations in special departments as refractions of eyes, laboratory tests, X-ray examinations, surgical operations, confinement cases and professional consultations, nursing and ambulance facilities, house calls and hospitalization in a semi-private room (two bedroom), or a private room, limited in either case to a period not to exceed twenty-one days for any one illness; provided, however, that each member desiring to occupy a private room shall reimburse the Corporation for so much of the cost of such room as shall exceed the sum of \$4.00 per day; provided, further, that such member shall make such payments to assure such reimbursement as the Corporation shall require, and provided that the benefits provided outside of the territory of the Association shall be limited to the provision of a hospital room for the time and as herein provided.

"The extent that medical service relating to the foregoing items will be furnished to members shall be determined and prescribed by the Medical Director or his representatives in each individual case."

Section 2 of this Article X outlines the types of treatments which are not furnished by the corporation.¹

"ARTICLE X.

"Section 2. The following medical service will not be furnished by the Corporation:

"1. Treatment of industrial accident cases.

"2. Surgery of the brain or nervous system.

"3. After the time that the Medical Director recommends confinement in an institution in mental, tubercular, drug or alcoholic addiction cases."

Time will not permit quotations of all of the sections of the By-Laws but it may be seen from the above sections that a fairly complete medical service is promised. Another section outlines certain things for which members are charged. Among these are drugs, dental work, blood transfusions and oxygen tents and materials.

It is proposed to treat venereal disease at the rate of fifty cents (\$.50) per treatment.

Necessary house calls are to be answered within a radius of ten miles from the District of Columbia line except that the Medical Director may provide for house calls not exceeding twenty miles.

The Group Health Association Incorporated has been in operation a few weeks. A staff of doctors has been employed. A Medical Director has also been employed.

The District of Columbia Medical Society, of course, has discouraged any of its members taking employment under the Corporation.

The Boards of most of the hospitals in Washington have informed the Corporation that the hospital

can allow the courtesy of the hospital only to members of the hospital staff. This will probably only be a slight obstacle, since it would seem that the H.O.L.C. has allocated \$50,000 to start this project, and, if hospitals are not available, will probably arrange for hospitalization in a government hospital, or build one.

It is also probable that if this plan works successfully in the H.O.L.C., it will be taken up by the other Government departments in Washington.

If this plan works and other departments undertake it, private practice in Washington will be doomed. This is true since a large part of the population there either is employed in the Federal service or are dependents of an employee.

If private practice is destroyed in the District of Columbia, the legalization of social medicine throughout the nation will be the next step.

After the above outline of the set-up plan, the question naturally follows: What is the District of Columbia Medical Society doing to protect private practice?

At present, the situation is that the Medical Society has filed a brief with Corporation Counsel for the District of Columbia and the District Attorney charging the Group Health Association Incorporated with practicing medicine illegally, and operating an insurance clinic without a charter or having submitted their plan to the Insurance Board of the District of Columbia.

The American Medical Association, while it has published a concept by Dr. Woodward on this plan, has taken the attitude that the problem here presented was a local one.

Perhaps it is, at the moment, a local problem, but how long can the members of the medical profession take the attitude that any problem of this kind will not affect the entire profession?

To make the task of the District Society more difficult, there are some recognized members of the medical fraternity who feel that this type of medical set-up is what the country needs. Dr. Richard Cabot, Professor of Clinical Medicine Emeritus, Professor of Social Ethics Emeritus, Harvard University, in a speech before the meeting of the Group Health Association at the Mayflower Hotel, Washington, D. C., October 30, 1937, opened his address with the following words:²

"The gist of what I have to say about the value of your Group Health Association can be put into five words—better doctoring for less money."

One cannot help but wonder where Dr. Cabot can find evidence to support such a statement.

He states further along in his speech, and I quote again from the same address:²

"The greatest single curse in medicine is the curse of unnecessary operations, and there would be fewer of them if the Doctor got the same salary whether he operated or not. We shall not get away from them any other way than by this scheme."

The above statement is an unjust statement in criticism of the men devoting their lives to surgery. I have never known a surgeon who would allow the question of payment for an operation sway his decision.

I do not believe the Group Health scheme will make for better surgical judgment.

In closing his speech, Dr. Cabot's words are as follows:²

"Finally, this is such an obviously good thing that some years hence when we look back to the beginning we shall say 'How extraordinary it was that we waited to do this until 1937. The thing was so perfectly obvious all the time, why didn't we do it before?'"

With advocates within the profession, who are ready to support the advent of social medicine, and with financial backing already allocated, the Group Health Association is off to an apparently good start.

The only organization to combat the scheme is our neighboring District of Columbia Medical Society. If the legal battle in the District Court fails, we in Virginia will probably be asked to give support through our representative in Congress.

It is my hope that this rather sketchy outline of the problem may stimulate its readers to investigate more fully the problem that our Washington confreres have now before them.

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PREMATURE SEPARATION OF THE PLACENTA—A STUDY OF
FIFTY-SIX CASES OCCURRING AT THE MEDICAL
COLLEGE OF VIRGINIA HOSPITALS.

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Premature separation of the placenta was first described by Louise Bourgois, 1609. Holmes called it "ablatio placenta"; DeLee refers to it as "abruptio placenta", and the severe form described by Couvelaire is known as "uteroplacental apoplexy".

The incidence varies greatly according to the statistics studied: Polak, one in three hundred and five cases; Davis and McGee, one in three hundred and fifty-seven cases, and at the Medical College of Virginia the occurrence of complete separation averaged one to five hundred and thirty-four deliveries. Multiparity appears to be a predisposing factor and was found to be an associated condition in seven, or seventy per cent, of the cases of complete separation, and thirty-nine, or eighty-four and eight-tenths per cent of the cases of partial separation.

The etiology is unknown, early improper attachment of the anchoring villi, toxins elaborated by infarct formation (Young) and trauma having been suggested as possible causes. Hofbauer produced similar changes in animals with histamine injections, and Browne (1928) produced nephritis in animals and caused premature separation of the placenta by injecting B-pyocyaneus. Toxemia of pregnancy is the probable cause and seven, or seventy per cent, of the severe group, and twelve, or twenty-six and nine-one-hundredths per cent, of the mild group had an associated toxemia; only one case, a patient with nephritis, revealed excessive infarct formation of the placenta. Two cases having partial separation gave histories of trauma and one followed artificial rupture of the membranes because of polyhydramnios.

TABLE I.

| | Primi- parae | Multi- parae | Colored | White | Asso- ciated Toxemia | Ma- ternal Mor- tality | Fetal Mor- tality |
|--------|-----------------|-----------------|---------|-------|----------------------------|---------------------------------|-------------------------|
| Severe | 3 | 7 | 10 | 0 | 7 | 0 | 10 |
| Mild | 7 | 39 | 33 | 13 | 11 | 1 | 37 |

Following extensive separation blood rapidly infiltrates the uterine wall, giving to the uterus a purplish, coppery mottled appearance with edema and dissociation of the muscle fibres, edema of the

tubes, ovaries and broad ligaments, and not infrequently dark blood in the peritoneal cavity.

TABLE II.

| Duration of Pregnancy | Severe | Mild |
|-----------------------|--------|------|
| Under 28 weeks | 3 | 8 |
| 28-36 weeks | 1 | 16 |
| 36-40 weeks | 6 | 22 |

The diagnosis of sudden extensive separation is not difficult and usually occurs during the last trimester of pregnancy; however, eight cases, or seventeen and thirty-nine hundredths per cent, of partial separation, and three, or thirty per cent, of complete separation occurred before the last trimester. Sudden severe abdominal pain followed by vaginal bleeding (if seen after sufficient time for clot formation, the discharge may be serous as a result of clot formation in the vagina), exquisite tenderness and slight enlargement of the abdomen, disappearance of fetal heart sounds and movements and, if seen soon after the separation, signs of shock may be out of proportion to the amount of blood lost. Very rarely (1 to 15,000 deliveries reported by Williams—none in this series) hemorrhage may be concealed with no vaginal bleeding. Anemia is always an outstanding late symptom, the hemoglobin averaging fifty and nine-tenths per cent and the red blood cells 2,801,000 in the ten severe cases. Vaginal examination reveals the membranes, if intact, and presenting part under increased tension. The absence of placental tissue near the internal os differentiates this condition from placenta previa.

TABLE III.
HEMOGLOBIN AND RED BLOOD CELL ESTIMATION IN THE
SEVERE GROUP

| Hemoglobin | Red Blood Cells |
|---------------|-------------------|
| 44 | 2,520,000 |
| 70 | 3,600,000 |
| 66 | 3,720,000 |
| 40 | 2,800,000 |
| 66 | 3,450,000 |
| 40 | 3,600,000 |
| 37 | 1,570,000 |
| 46 | 2,360,000 |
| 49 | 1,870,000 |
| 51 | 2,520,000 |
| Average 50.9% | Average 2,801,000 |

Partial separation occurs as a rule after the onset of labor, and at the time of separation contractions

increase in frequency and intensity, vaginal bleeding increases, and fetal heart sounds become irregular or disappear.

The fetal mortality rate is necessarily high, being one hundred per cent in cases of complete separation, and in cases of partial separation will increase with increased amount of separation. Forty-six cases of partial separation resulted in thirty-seven, or eighty and forty-three hundredths per cent, fetal deaths. Viable babies with fifty per cent or more of separation is quite rare. Maternal mortality varies from two to ten per cent. One patient in this group entered the admitting room in profound shock, and was said by the referring physician to have had a central placenta previa and premature separation of the placenta. The patient delivered spontaneously a few minutes after admission and died two hours later as a result of continued shock. There was an uncorrected maternal mortality rate of two and seventeen hundredths per cent in the mild group and no deaths in the severe group.

There is much divergence of opinion as to the treatment of premature separation; however, the immediate treatment is that for shock and hemorrhage. Operation for severe cases is definitely agreed to be the procedure of choice. If the typical picture of utero-placental apoplexy is present the uterus should be removed even though hemorrhage may not be present at the time of operation, as there is no way of definitely determining the extent of damage to the uterine muscle and whether or not hemorrhage will later occur. This will occasionally result in the needless sacrifice of a uterus; however, attempting to preserve these uteri will occasionally sacrifice a life and the former is distinctly better. Each of the ten cases of complete separation was delivered by classical Caesarean section, followed by supracervical hysterectomy. Treatment for partial separation will depend upon the progress of labor, condition of the cervix, absence or presence of infection and the general condition of the patient. Manual dilatation, incision of the cervix, the use of bags, version and extraction and difficult forceps should not be used. Better results are obtained if the membranes are ruptured, to allow the uterus to contract down more closely around the baby so as to help decrease the bleeding and to facilitate labor. Spontaneous delivery is desired and if increased bleeding follows delivery of the baby the placenta should be removed quickly, manually if necessary, and the uterus

packed tightly, being particularly careful to pack the fundus completely in order to prevent bleeding behind the pack. Intravenous fluids and transfusions are given if hemorrhage is profuse or there are signs of shock.

TABLE IV.
METHODS OF DELIVERY

| | |
|---|----|
| Caesarean section, followed by supracervical hysterectomy | 10 |
| Spontaneous | 37 |
| Forceps | 4 |
| Breech extraction | 4 |
| Version and extraction (prolapse of arm) | 1 |

SUMMARY

1. Multiparity and toxemia are associated conditions in a high percentage of cases of premature separation of the placenta.

II. Premature separation of the placenta may occur in apparently normal pregnant individuals.

III. Trauma is seldom an etiological condition.

IV. Unless seen soon after the separation, shock may not be a prominent symptom and should not influence one to refrain from active treatment. Patients rarely die from hemorrhage at the time of the initial separation (Rucker).

V. Anemia and vaginal bleeding are constant late findings.

VI. Partial separation should be treated conservatively, allowing the patient to deliver spontaneously, being ready to combat post-partum hemorrhage and shock with uterine packing, intravenous fluids, etc.

VII. Complete or extensive separation should be treated by supracervical hysterectomy so as to prevent subsequent hemorrhage.

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PRIMARY MASTOIDITIS—REPORT OF A CASE.*

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Primary mastoiditis was not recognized as a clinical entity in the training of a number of us who are present; in fact, few have admitted the possibility of such a condition. Upon review of the literature one will find such a dearth of material as might raise a question of the existence of primary mastoiditis. On the other hand, are all such cases diagnosed? It is this latter thought that prompts us to report a case which raises a question as to whether or not this is a neglected subject, and it is our hope we may stimulate interest in the hunt for such a possibility when we are confronted with vague ear symptoms.

The usual symptoms of middle ear involvement, constant discharge from the auditory canal, associated with sagging of the postero-superior wall, together with reduced hearing and elevated temperature, may be absent when mastoiditis is present as an anomaly.

According to McLoone,¹ extensive pathological changes are encountered without alarming clinical symptoms, the disease may occur without apparent middle ear involvement, and pain may be altogether lacking. Tenderness on pressure over the mastoid with absence of swelling is often noted, and sagging of the canal wall as well as fever are usually absent in atypical mastoiditis. Hempstead², Perkins,³ West⁴ and others have reported cases of mastoiditis without apparent middle ear involvement. The only cases of frank primary mastoiditis we seem to find are reported by S. J. Kopetzky⁵ and R. Almour, three cases which were definitely proven.

Case: A well-developed white man, forty-seven years old, World War veteran, personal and family history good, filling station operative. He was sent to the hospital, entering February 9, 1937, with a tentative diagnosis of hysteria, dizzy spells, headache and ear disease. His home is distant some hundred or so miles in another State. Complete physical examination revealed heart, lungs, and kidneys negative; slight thyroid enlargement; dental caries with pyorrhoea; eye-grounds normal; pupils equal and reacted to light and accommodation;

vision good, bilateral; hearing normal, bilateral. The left ear was normal on inspection. The right ear revealed three small stab wounds on the posterior wall of the auditory canal through the skin near the drum margin. The drum was normal in color and position except redness on the posterior border nearest to the stab wounds, fading toward the center. The canal was carefully cleaned with alcohol and a dressing applied. After twenty-four hours these wounds had about healed, and soreness from which he complained had subsided. The redness of the drum margin being still present, we made a free incision along the posterior margin through the drum, but this revealed no pus or fluid, or anything abnormal in the middle ear. This wound healed in approximately twelve hours with no diminution of hearing; the hearing remained normal throughout his stay. He said that several days before his coming to us a doctor in his home community lanced his ear three times and told him he could get no pus or fluid except a little blood; that there was something out of the ordinary the matter with him, for which reason he came to the hospital. There was no swelling, redness or discoloration about the face, head, or neck. The skin on the right side of head and neck was acutely sensitive to touch throughout the entire area from the clavicle to vertex and from symphysis mandibulae to occiput. A light touch, even a fold of bed sheet touching the area would apparently cause severe pain. Lightly touching the skin over the mastoid area would cause an "ouch"; but holding the finger in position fifteen seconds the pain would disappear, even under firm pressure. This phenomenon was present in any portion of the area above described. X-ray films did not reveal anything of value. He slept well through the night but was highly neurotic and non-cooperative, through the day-time making himself a nuisance and a most disturbing factor to the other patients. He had a fixed idea that he was going to have mastoiditis and die, giving his reason that two of his children had suffered with the disease and both promptly died following operation.

Temperature was normal and remained so throughout his stay, excepting a rise to 101 for a

*Read before the Virginia Society of Oto-Laryngology and Ophthalmology at Staunton, Va., May 8, 1937.

brief period on two occasions, each instance following an exaggerated hysterical spell. Average temperature was 98.1.

Laboratory Studies: Urinalysis revealed no pathology. Wassermann negative; Kahn negative. Blood chemistry N. P. N. 36; creatinin 1.2; hemoglobin 85; red cells 4,350,000; white cells 11,250; polys 72; lymphocytes 22; monocytes 2; eosinophiles 4. This remained about as above until the early morning of February 15th, six days after entering the hospital, when he was observed on awakening to be very quiet, and taking little interest in his surroundings. When questioned, he would say "I feel awful dizzy," and would not volunteer any information. He had a septic look. A blood count made at 8 A. M. revealed white cells 2,700; polys 22; lymphocytes 64; monocytes 12; eosinophiles 2. At 11 A. M., two different laboratory technicians took specimens and the result was counted by three separate counters, the unanimous result being white cells below 2,500. Up till this time the patient had rejected emphatically any suggestion of operation; also three surgeons and three internists, all experienced clinicians, advised against operation until this grave blood picture presented itself, when each advised that operation would hasten the end. Thus each of these consultants were most emphatic in opposition to any operation. It was late in the afternoon, after telling the patient repeatedly there were grave changes in his blood as revealed by the laboratory studies, and there were probabilities of an early demise, that he consented, giving his reasons that he knew he was going to die, and by the ether route would be painless. So he was taken to the operating table at 6:30 P. M., firmly believing he was going to sleep, not to awaken till "Gabriel sounds his trumpet." We confess it required Spartan courage to proceed under such circumstances.

The cellular portion of the mastoid was shallow. Removal of the cortex revealed the cells, antrum and process as one cavity, the content of which was a yellow semi-solid mass having the appearance of an oyster fattened in fresh water, the mass when lifted from the cavity proving to be "coagulated pus," if such a term be allowable. Unfortunately the specimen failed to reach the laboratory for bac-

terial study. The floor and walls of the cavity, which were about one centimeter in depth, seemed perfectly healthy. There was no communication between the cellular structure of the mastoid and the middle ear. No curetting or "burring" of the bone was necessary, and bleeding was slight; the cavity was lightly filled with iodoform wicking and the upper portion of the wound closed with metal sutures; a simple dressing was applied and the patient put to bed. In one hour he awoke as if from natural sleep and said, "I am well, I have no dizziness, I am hungry." The gauze wick was removed in two days and was not replaced; a liberal diet was fed him; also liver extract was used intramuscularly until February 27th, when his white blood count was 8,000. The wound had healed by March 9th, twenty-one days after operation. His convalescence was smooth and his gratitude profound.

We confess that we would not have operated had not the blood picture appeared,—dropping of the white count from 11,000 to 2,500 over-night seemed to us to indicate that delay would be dangerous. It is noteworthy his "Dr. Jekyll and Mr. Hyde" complex, one of the most trying of patients, changed to one of the best behaved in so short a space of time.

Is it possible that primary mastoid is not so rare as we were led to believe? Have not all of us had patients to die, leaving us to wonder if they would have been given a chance to live had we risked our judgment in the premises when we were dealing with something that was atypical?

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PRIMARY CARCINOMA OF THE LUNG.—REPORT OF FIVE CASES
AT U. S. MARINE HOSPITAL, NORFOLK, VIRGINIA.*

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The reason for reporting these five cases of primary bronchogenic carcinoma occurring among the annual admissions of a 300-bed hospital is not because this is a rare disease, but on the contrary as further evidence of its increasing frequency. That ours was not an unusual run of cases is manifested by the recent report of a similar series at the Ellis Island Marine Hospital by Arenberg and Ginsberg.¹ Once regarded as a clinical rarity, it may now be considered as one of the major chest diseases. A review of the literature shows that this change has taken place only within the last two decades. Prior to that time primary pulmonary neoplasms comprised less than 1 per cent of all carcinomas, whereas at present they form from 7 to 10 per cent of them as reported in various parts of the world. In view of this the occurrence of our five cases among an annual admission of 3,000 patients is not entirely surprising. They constituted 33 per cent of fifteen post-mortem malignancies out of a total of seventy-three autopsies performed in this hospital during the current year.

CASE REPORTS

(Only pertinent data are included.)

Case 1.—C. M., white male, fifty-seven-year-old seaman, who smoked ten or more cigarettes a day, was admitted to the hospital March 13, 1936, and died on April 30, 1936.

History: Chief complaint was "pain in right chest." In June, 1935, patient fell against the rail of his ship, striking his right chest a rather severe blow. The accident was followed by a dull aching pain, which was not severe enough to prevent his working. Early in December, 1935, approximately six months after the injury, the patient contracted what he thought was a cold and began coughing. The

pain in his chest became more severe and soon he was expectorating a bloody sputum. In January the patient noticed that he became short of breath and could not lie on his left side because of dyspnea. The pain and cough continued and his sputum contained variable amounts of blood. From the onset of the cough he grew progressively weaker and had a diminishing appetite. One week prior to admission his right-hand and forearm began to swell.

Examination: A well-developed, poorly-nourished, white male adult of five feet eleven inches, weighing 140 pounds. Usual weight had been 170 pounds. The general appearance is that of respiratory distress with dyspnea and cyanosis and edema of face and right upper extremity. The veins of the neck are swollen. Chest: Flatness over lower right chest extending to the fourth dorsal spine and the clavicle. Marked restriction of motion of right chest. Heart and trachea displaced to the left. Breath sounds absent over the right lung and exaggerated vesicular over the entire left. X-ray examination shows entire right chest opaque with displacement of heart and trachea to left as from massive pleural effusion. Film following aspiration of fluid and induction of pneumothorax shows the right lung to be consolidated and the impression is that of carcinoma. Laboratory examination: Wassermann and Kahn negative. Urine negative except for trace of albumen. Erythrocyte count 3,490,000 with 68 per cent hemoglobin, leucocyte count 12,000 with 77 per cent neutrophils, 12 per cent small mononuclears and 11 per cent large mononuclears. The sputum is negative for tubercle bacilli and no cancer cells are found in it. The aspirated pleural exudate sedimented, fixed, sectioned and stained showed a cytology more suggestive of a malignant than of an inflammatory process.

Course: Steady, down-hill course with constant complaint of pains in chest necessitating administration of narcotics. Edema of face and right upper extremity became more pronounced and the cyanosis of these parts increased. The veins of the neck and

*From the General Medicine and Pathological Departments of the U. S. Marine Hospital, Norfolk, Virginia. Presented before the County Medical Society, Norfolk, Virginia, on June 14, 1937.

Approved for publication by the Surgeon General, U. S. Public Health Service.

right shoulder girdles became greatly dilated and those of chest and abdomen were also distended. Dyspnea became more marked and there was evidence of pressure about the superior mediastinum. The patient died with the development of pulmonary edema.

Autopsy: The primary carcinoma was represented by a large mass embedding the right main bronchus. Many tumor nodes were disseminated throughout the right lung with the exception of its base. The central portions of the neoplastic masses were frequently necrotic and liquefied. Secondary and metastatic nodes were extensive. They heavily invaded the right pleura and mediastinum, including the pericardium and the adventitia of the aorta. Further metastases were found in the left lung, liver, pancreas, left adrenal body and the kidney and in the retroperitoneal lymphnodes. The microscopic structure was that of an undifferentiated carcinoma, "oat cell" variety.

Complications were: Empyema of the right chest and broncho-pneumonia of the left lower lobe. A sclerosis of the coronary arteries was also found.

Case 2.—W. J., white male, forty-nine years of age, cabinet maker, smoked excessively over two packages of cigarettes a day. He was admitted to the hospital on August 4, 1936, and died September 22, 1936.

History: Chief complaint was "pain in right shoulder blade." Patient states that on June 1, 1936, all of his teeth were extracted. About a week following this he developed a pain in the upper right chest. A few days later he developed a cough and consulted a physician. The pain has been more or less constant since onset. The cough soon became productive of considerable foul sputum. About a week before admission he noticed some blood in his sputum. For the last few weeks he has had night sweats and fever.

Examination shows an obese, rather pale adult male, who is acutely ill, lying semi-recumbent upon the left side. Height is a little above average and weight over 200 pounds. The patient coughs frequently and expectorates large quantities of purulent sputum. Chest examination shows limited motion on right side. There is dullness over the middle and upper lobes with bronchovesicular breathing and increased whispered voice and coarse rales and expiratory wheezes. The lower right lobe and left lung are clear. The X-ray examination shows the entire upper half of the right lung field obscured

by a dense shadow. Serial X-ray films (some using deep penetration) shows a partial destruction of the fourth and fifth ribs posteriorly. This suggests a malignancy. Laboratory Examination: Blood Wassermann and Kahn negative. Erythrocytes 4,200,000 with 80 per cent hemoglobin, a leucocytosis of 14,950, with 63 per cent neutrophils, 31 per cent lymphocytes, 2 per cent mononuclears and 1 per cent each of eosinophiles and basophiles. Sputum is negative for tubercle bacilli, Vincent's spirochetes, blastomycetes, other fungi or for cancer cells.

Course: Febrile course from 37° to 39° C. Therapeutic test with neoarsphenamine in the hope of benefiting a lung abscess and possible Vincent infection was unsuccessful. Bronchoscopy revealed mucopurulent material oozing from the upper right bronchus which obstructed the view. Frequent attempts at aspiration of pus from the pleural cavity were unsuccessful, excluding a possible encapsulated empyema. Finally an exploratory incision revealed a large carcinomatous mass which had perforated the chest wall posteriorly, destroying ribs and burrowing beneath the scapula. A frozen section of this tissue showed it to be a carcinoma. The patient died from exhaustion and toxemia.

Autopsy: The upper lobe of the right lung was the seat of a primary cancer. The entire lobe was transformed into a pinkish white tumor mass, broken down in its central portion into a large abscess. It infiltrated the chest wall, causing a marked erosion and partial destruction of the second to fifth ribs posteriorly as well as the bodies of the third to fifth thoracic vertebrae. Large mediastinal lymph nodes, invaded by the tumor, were also present. In addition, adhesive pleurisy, exudative bronchitis, fatty infiltration of the liver and subacute, toxic splenitis were found. Microscopically the neoplasm proved to be an undifferentiated cell carcinoma, round cell variety, which was quite anaplastic.

Case 3.—O. M., white male seaman, fifty-three years old, smoked two packages of cigarettes a day. He was admitted on September 5, 1936, and died on September 20, 1936.

History: Chief complaint was "shortness of breath." Patient states that about eight months ago he developed a chronic cough which grew progressively worse. Five months ago he noticed that he was becoming short of breath on exertion and was growing weaker. This became so severe that he had to quit working. For the last month or so he has

had a constant, dull aching in his left chest. There has been only about ten pounds loss in weight. Cough has never been productive of much sputum and there has been no blood in it.

Examination: Shows a well-developed and only slightly under-nourished adult male. Height sixty-seven inches, weight 150 pounds. General appearance is that of marked dyspnea with slight cyanosis. Chest: Flatness over the entire left lung accompanied by absence of breath sounds and tactile fremitus. At extreme left apex there is bronchial breathing and coarse rales. The right lung is hyper-resonant with exaggerated normal breath sounds. Practically no motion of left chest on respiration. There is an enlarged indurated supraclavicular gland on the left side. The X-ray examination showed the left hemithorax occupied by a dense homogeneous shadow and the heart seemed slightly shifted to right, giving the impression of a massive pleural effusion. Laboratory: Blood Wassermann and Kahn negative. Red blood cells number 5,190,000 and hemoglobin of 100 per cent. White blood cells number 11,100 with 76 per cent neutrophils, 21 per cent lymphocytes, 1 per cent monocytes and 1 per cent eosinophiles. Urine entirely negative. Sputum negative for tubercle bacilli.

Course: Low febrile course. Repeated attempts at aspiration of pleural fluid failed and the impression was that the needle penetrated consolidated lung tissue. Biopsy of cervical lymph node showed its structure was wiped out by invasion of metastatic carcinoma cells. Palliative treatment with narcotics relieved the patient. On September 20, 1936, patient on attempting to get out of bed suddenly collapsed into coma and died shortly thereafter.

Autopsy: There was a primary carcinoma of the left lung, replacing the greater part of the upper lobe and much of the lower lobe. The left main bronchus was closely collared by the tumor mass. The nodes of the growth showed central necrotic and hemorrhagic areas. Due to the heavy malignant invasion, the left pleura presented a thickness of one-half cm. The mediastinal lymph-glands were extensively involved, particularly above the base of the heart. There was a metastatic carcinoma node in the left temporal lobe of the brain which probably accounted for the patient's sudden death. The microscopic picture was that of an undifferentiated cell carcinoma, round cell variety.

Case 4.—J. R. W., white male, forty-one years of

age, a roofer, smoked about twenty cigarettes daily. He was admitted on August 4, 1936, and died August 18, 1936. He had been previously hospitalized for the same complaint from December 28, 1935, to April 24, 1936.

History: Chief complaint was "cough and shortness of breath." On October 14, 1935, the patient was in an automobile accident which resulted in an injury to his chest. Since then he has had pains in his right chest. He was able to continue work until two weeks prior to his first admission, when shortness of breath became too severe. For a month or more prior to taking to his bed he had noticed a progressive cough and he had had some shortness of breath and a feeling of progressive weakness. The cough has been non-productive. The pain in the chest is of a dull nature and has been more or less constant since onset. He has never expectorated any blood.

Examination: An adult male, white, well-developed and nourished. Height about five feet eight inches, weight 140 pounds. There is marked dyspnea and the respirations are abdominal in type. The patient coughs frequently but does not expectorate. The chest is flat over the lower right side with absence of breath sounds and vocal fremitus. There is marked restriction of movements on the right. Tenderness is present over the lower part of the right thoracic wall posteriorly. The heart is displaced to the left. X-ray examination shows a right pleural effusion with displacement of the mediastinum to the left. X-ray following aspiration and pneumothorax show the underlying lung to be dense. Laboratory: Wassermann and Kahn are strongly positive. (The patient had had a penile lesion in 1918 with inadequate treatment.) The urinalysis showed albumen and cast on first examination, which cleared up in later specimens. The red blood cells number 4,050,000 and the hemoglobin is 76 per cent. White blood cell count 14,950, with neutrophils of 73 per cent, small mononuclears 17 per cent and monocytes 10 per cent. Aspirated pleural effusion is hemorrhagic on repeated taps. Its examination shows many erythrocytes, some leucocytes and epithelial cells. Special study fails to demonstrate any typical carcinomatous cells. Sputum is negative for tubercle bacilli and for malignant cytology. Guinea pigs inoculated with pleural fluid do not develop tuberculosis.

Course: Febrile at first. Repeated aspirations of the pleural effusion were necessary. These were

always hemorrhagic, suggesting cancer rather than tuberculosis. Pneumothorax was instituted to keep diseased lung collapsed. He was given specific anti-syphilitic medication in form of bismuth and neoarsphenamine. On April 24, 1936, he was transferred to another hospital for further treatment. He was ambulatory and afebrile at the time. Weight was satisfactory. There was still some dyspnea and weakness and the main complaint was pain in the chest. His prognosis was given as poor. On August 4, 1936, he was re-admitted in a critical condition and died on August 18, 1936.

Autopsy: The right lung presented a diffuse, nodular type of carcinoma. It was collapsed to the size of two fists due to a pneumothorax and a large fibrino-hemorrhagic pleural exudate. Frequent tumor nodes had invaded the pleura. A microscopical study indicated a poorly differentiated adeno-carcinoma. The secondary masses of the growth were widely distributed to the mediastinal, axillary, cervical and peritoneal lymph glands; the right side of the diaphragm, the liver, the pancreas and the left adrenal body. There was an associated syphilitic aortitis.

Case 5.—N. L., white male, thirty-eight years old, seaman, smoked two packages of cigarettes daily. He was admitted on October 27, 1936, and died January 17, 1937.

History: Chief complaint was "pain in the back of my chest." Patient stated that he first noticed a pain in the back of his chest about a year ago. It has been more severe during the last month or two. He has had a dry "cigarette cough" for several months. His appetite has been poor for several months but he believes he has not lost over six pounds in weight. He knows that he is growing progressively weaker. There have been occasional night sweats in last three months.

Examination shows a fairly well-nourished white male, five feet eight inches in height, weighs 143 pounds. There is some limitation of motion of right side of chest. There is an area of impaired resonance from the fourth rib to the clavicle and in the interscapular region on the right. The breath sounds are diminished in this region. No rales are heard. The left lung is normal. The veins of the neck are distended, especially on the right side. The X-ray reveals a dense shadow the size of the palm of the hand, extending from the hilum into the midportion of right lung field. The impression is that of a

primary carcinoma but tuberculosis and spirochetal and fungus infection must be ruled out. Laboratory Examination: Blood Wassermann and Kahn are negative. The urine is essentially negative. The sputum smears are negative for acid fast bacilli and cancer cells. A few specimens show an actinomycosis fungus. The National Institute of Health reports that these actinomycoses are of the non-pathogenic type frequently found in the mouth. Erythrocytes number 5,700,000 with 100 per cent hemoglobin. The leucocytes number 8,800 with 57 per cent neutrophils, 32 per cent small mononuclears, 5 per cent large mononuclears, 6 per cent monocytes on admission. A leucocytosis of 17,000 with 82 per cent neutrophils developed towards the end of the disease.

Course: The patient was studied as a possible primary pulmonary malignancy. Bronchoscopy on November 11, 1936, revealed no pathology in the right bronchi. Serial X-ray films at first showed very little change in the lung lesion, but towards the end there appeared a rapid spread with a rise of the right diaphragm which indicated hepatic metastasis. A needle puncture biopsy of the lung was done on December 28, 1936, but this failed to reveal carcinomatous tissue. The finding of actinomycetes in the sputum temporarily clouded the picture. Towards the end the pain in the chest became so severe narcotics were required for relief. Cough became productive of copious purulent material which occasionally contained blood. At this time there was a daily fever curve. The patient grew more dyspneic and cyanotic and the veins of the neck became greatly distended. The liver increased tremendously in size and its surface was distinctly nodular so that there was no doubt of the diagnosis of carcinoma of lungs with liver metastasis. Death was gradual from exhaustion.

Autopsy: There was a primary carcinoma in the upper lobe of the right lung. The grayish-white tumor mass had enveloped the right eparterial bronchus and spread to the inner half of the upper lobe, and to the distal end of the trachea. A very large secondary mass, showing central necrosis, filled out the mediastinum. The liver was greatly enlarged due to its invasion by numerous large malignant masses. Secondary metastases were also found in the left lung and both kidneys. Associated lesions were right serous pleural exudate, bilateral adhesive pleurisy, adhesive pericarditis and a bron-

chopneumonia of the base of the right lung. Histological sections revealed the neoplasm to be an undifferentiated cell carcinoma.

N. B.:—T. M., age sixty-three, brother of patient C. M., Case No. 1, is at present a patient at U. S. Marine Hospital, Norfolk, with primary carcinoma of right lung. This diagnosis was made by laboratory examination of the pleural exudate which yielded a

span of life and with better diagnostic facilities an increase in all types of cancer can be expected. That the incidence of cancer of the lung is growing faster than other types of malignancies seems probable. Arkin² finds that it comprises at least 8 per cent of all types of carcinoma and ranks it second only to carcinoma of the gastro-intestinal tract.

Etiology: The majority of cases occur between

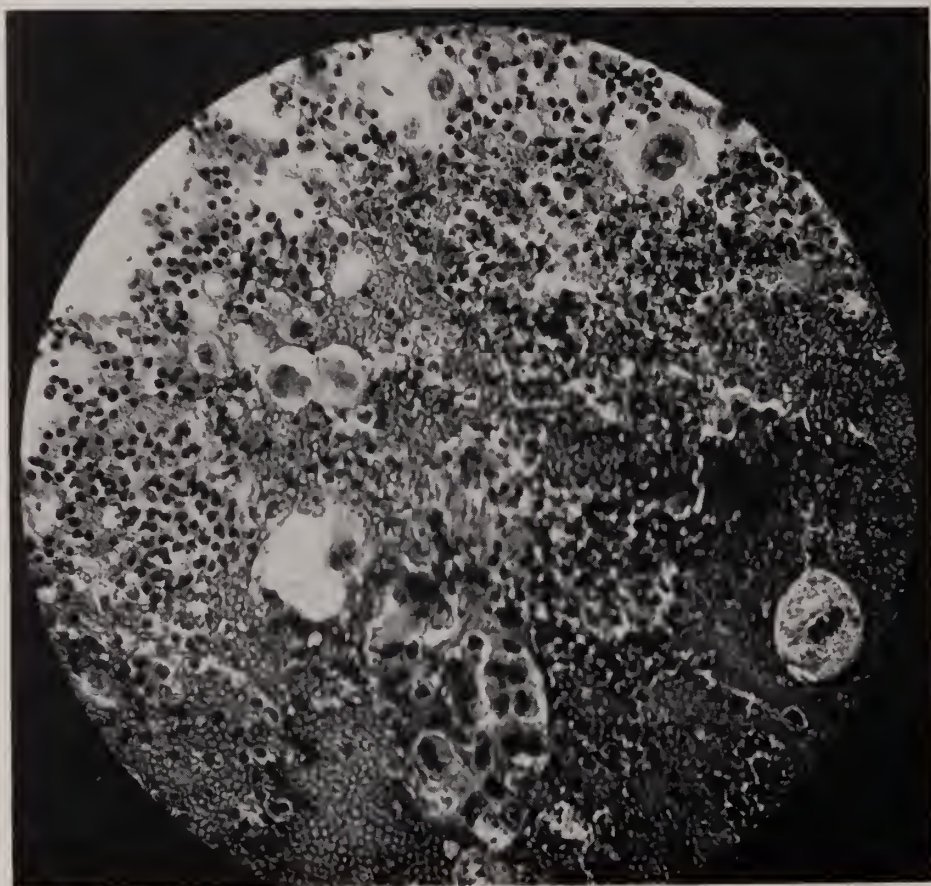


Figure T. M.—High power view of section of a paraffin embedded pleural fluid. Malignant cells are the large single or multinucleated cells. One at "X" shows mitosis. Patient died on June 9, 1937, and autopsy confirmed the diagnosis showing a squamous cell type of primary carcinoma of the lung.

characteristic cytology. He and two other suspicious cases serve to show that we still have lung cancer patients in our hospital (See Figure T. M.).

COMMENT

The importance of this subject warrants a brief discussion of points of clinical interest.

Prevalence: A review of the literature leaves no doubt of the increasing frequency of primary lung carcinoma. The only point of argument is whether this increase is relative or absolute. With prolonged

forty and sixty years of age. Males predominate three to one over females. There seems to be no particular racial distribution.

Among the predisposing etiological factors various inflammatory lung diseases, such as influenza, bronchitis, bronchiectasis and tuberculosis have been listed. Chronic irritation from the inhalation of smoke and dust has also been blamed. Arkin and Wagner³ found 90 per cent of their patients were chronic smokers. All of our patients were heavy

smokers. Jaffe⁴ believes syphilis, by causing a chronic irritation of the bronchial mucosa, may be of importance in the pathogenesis of lung cancer. Syphilis was present in 25 per cent of his cases. The inhalation of automobile exhaust gases and the emanations from tar on roads are other agents advanced to explain the growing incidence of pulmonary malignancies.

Pathology: It seems practical to classify primary lung cancers according to Olsen⁵ and Brines and Kenning⁶ into three main groups. The most frequent is the *hilar* or *bronchial carcinoma* which spreads from the hilus and is generally an undifferentiated cell carcinoma—round-celled or the so-called “oat-cell” carcinoma; the second most common is the *diffuse* or *lobar type*, which originates in the midlung region and microscopically usually proves to be a squamous cell carcinoma. The third group comprises the *peripheral* or *nodular type*, which spreads early to the pleura and structurally is usually an adeno-carcinoma. The prevailing opinion among pathologists at present is that all lung cancers are bronchogenic. All cases do not conform clearly to one of the above groups, but there are all gradations of mixed types.

Symptoms: The four cardinal symptoms are pain in the chest, cough, hemoptysis and dyspnea. The cough is the earliest symptom. At first dry and hacking, it later becomes productive of mucopurulent or hemorrhagic sputum. Frank hemoptysis is common. Pain in the chest of a dull constant type is perhaps the most characteristic complaint. It is due to involvement of the pleura or invasion of ribs or vertebrae.

Dyspnea and cyanosis are later symptoms. Loss of weight and weakness are seldom conspicuous. Fever and night sweats and leucocytosis are the rule.

The metastatic manifestations may completely mask the clinical picture. This should be especially remembered in cerebral metastases.

Diagnosis: Clinically a few pointers are of value. Always consider pulmonary new growths in cases of atypical tuberculosis with negative sputum, in recurrent pneumonias or chronic pneumonias, in unexplainable pulmonary abscess and empyemas and especially in hemorrhagic pleural effusions. A pleural effusion which remains bloody after repeated aspirations is more suggestive of cancer than tuberculosis.

Roentgenography and fluoroscopy of the chest are indicated whenever lung cancer is suspected. Serial X-ray films at appropriate intervals are of the greatest importance.

Bronchoscopy is most valuable early before the bronchogenic neoplasm has penetrated into the lungs or spread to the adjacent lymph nodes. This is the period when both the X-ray and physical signs are usually lacking.

Laboratory Methods: Only occasionally can cancer cells be demonstrated in the sputum since they are easily disintegrated in this material. It is nevertheless well to search for them in every suspicious case.

Tumor tissue can sometimes be obtained from the lung by a special diagnostic needle punch. This procedure is not without danger and cannot be recommended as a routine procedure.

Examination of aspirated pleural exudate for cancer cells has been found practical. The method used at this station for the paraffin embedding of body fluids and secreta is based on an outline by Eisenberg, *et al.*⁷

The biopsy of an enlarged cervical or axillary lymph gland will often serve as an easy means of diagnosis.

Treatment: Unless the diagnosis is made early the treatment must be palliative, narcotics being used when necessary to make the patient comfortable. Unfortunately this is the usual case, since the majority of patients seek medical advice only after their disease is far advanced.

Primary pulmonary neoplasms are known to be radio-resistant. All that can be expected from deep roentgenotherapy is some relief of pain and retardation in growth with prolongation of life for a short period.

When a case is diagnosed in its incipency by means of the bronchoscope, it appears that the neoplasm may occasionally be completely removed through this instrument as reported by Jackson, Orton, Greene and Kernan.⁸

For the rare patient in whom an early diagnosis has been made before metastases have occurred a lobectomy offers some prospect of success, as shown by Sauerbruch, Edwards, Allen, Smith⁸ and others. Pneumectomy, the excision of an entire lung, may be the operation of choice. Graham⁹ was first to resort to this operation, followed by Overholt,¹⁰ Lyle¹¹ and Reinhoff.¹²

CONCLUSIONS

1. Always be on the lookout for primary cancer of the lung. It is not a rare disease and appears to be on the increase. It will then be more frequently diagnosed antemortem.

2. Improved bronchoscopy will be the key to early diagnosis. In more advanced cases serial X-ray films offer the greatest diagnostic assistance.

3. A good pathologist seeking cancer cells in sputum, pleural exudate, lung puncture tissue or lymph gland biopsy will often be the first to disclose the true nature of the patient's disability.

4. Treatment is still discouraging and the only ray of hope is further advance in thoracic surgery.

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THE TREATMENT OF HAYFEVER BY IONIZATION— CASE REPORTS.*

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From the records available it would appear that ionization has been used as a therapeutic agent for the past forty years. In the late nineties, Dr. Baber, an English physician, reported cases of nasal hydrorrhea which were successfully treated by its use, and it is safe to assume that these cases were of an allergic origin. To digress for a moment, Dr. John McCoy, of New York, reported at length on the treatment of chronic otitis media by zinc ionization of the middle ear. He claims a high percentage of cures in ears so treated, and his claims seem to be substantiated by others who have worked along the same line. Dr. Tsoong, of Shanghai, may be mentioned in connection with Dr. McCoy's claim; also, Dr. Asherson, of London, seems to have been particularly successful in clearing up chronic ears by this method of treatment.

Some fourteen years ago Demetriades demon-

strated in the Vienna clinics a method of treating hyperesthetic rhinitis which he termed "iontophoresis," using at that time a nasal pack of cotton wool saturated with an electrolyte containing calcium salts, and into this pack he inserted a zinc electrode which was attached to the positive pole of a galvanic apparatus. Franklin, in England, later used a modification of this method and substituted a zinc solution in place of calcium with his nasal pack.

Much has been done in this country in the past decade to develop ionization in treating hayfever and allied conditions, and the work done along this line by Dr. Warwick, of Fort Worth, Texas, is certainly of a high order. Working along the lines developed by Franklin, he has placed at our disposal a machine for ionization which commends itself to the practical operator. He has improved the electrode and electrolyte solution by the addition of tin and cadmium, claiming less reaction when this combination of metals is used. In his first paper Dr. Warwick re-

*Read before the Richmond Eye, Ear, Nose and Throat Society, May, 1937.

ports a series of forty cases with cures in thirty-nine for from one to three years. Thirty-two of these patients needed only one treatment while the others required from two to three. Using the Warwick apparatus and technique, Dr. Alden, of St. Louis, has treated many cases, and was in his first report most enthusiastic about his cures. He went so far as to gather statistics from other men on 700 cases and, after a close study of these, reports cures in 80 per cent. Of the remaining 20 per cent, he claims 12 per cent were benefited, and 8 per cent received no benefit. In a later paper, however, Dr. Alden seems to have lost some of his enthusiasm for ionization in treating hayfever but still uses it for the more difficult cases.

Early in 1935 I acquired a Warwick outfit and began treating a few cases which had been coming to me at intervals for several years. Up to December, 1936, fifteen cases had been treated and the results had been very good. It is not my purpose to dwell upon diagnosis with reference to these cases which I shall report, because the majority of them were confirmed hayfever sufferers of long standing and had been given the usual treatment, such as nasal applications, pollen extracts, *et cetera*.

It is in order at this point to describe briefly the technique used in treating the ordinary case, this being based, of course, on the principles laid down by Dr. Warwick in his original article. Having determined that the patient is a hayfever sufferer, a careful examination of the nose is made. If there is marked obstruction such as that caused by a badly deviated septum, a submucous resection should be done. This is essential in order that the nasal pack and electrode can be properly placed. Ionization may be given six weeks after the operation. I might state here that in so far as mechanical blockage of the nose is concerned, it does not seem to be an important factor in producing hayfever, as the majority of cases treated were those in which the anatomy was good and a perfectly wide open nasal passage obtained after ionization.

The patient is given a three grain capsule of sodium amytal to be taken one hour before the time set for ionization. He is also given a prescription for four H. M. C. tablets, full strength, to have convenient in the event of reaction. Thus prepared, the side of the nose to be treated is fully anesthetized just as though a resection were to be performed. In addition, the area under the lower

turbinate should be anesthetized and a small pack of the anesthetic solution should be placed high up in the untreated nostril. In my cases a solution of pantocain, 2 per cent, 45 minims, to which is added fifteen minims of adrenalin chloride 1:1000, left in fifteen minutes, has been most satisfactory. The patient is now ready for the pack and electrode.

One should be careful in packing the nose to see that the cottonoid strip saturated with the electrolyte solution comes in contact with the entire mucous membrane of the side to be treated back to the nasopharynx. The packing should be made in a systematic manner: first, a short strip inserted under the lower turbinal bone; then the floor of the nose back to the soft palate should be packed in a uniform manner up to the attachment of the lower turbinal bone. This should be snug. Next, the upper nasal chamber should be packed, starting back against the body of the sphenoid and filling in the space between the middle turbinate and the septum on down almost to the lower pack. The electrode should now be inserted between the upper and lower packs and a small strip packed along the top of the electrode to wedge it securely in the nose.

The patient is then ready for the machine. The arm pad, or negative electrode, is placed on the forearm opposite the side of the nose treated. The connections are made with the outlet cords, and the nasal pack button is pressed to see if pack has been properly placed. If the pack is properly placed the arrow on right side of panel board will come within shaded area of dial when pack button is pressed. If it does not come within this area, current should be turned on and treatment allowed to progress for one or two minutes, then the current should be turned off again and the pack button again pressed. The arrow will usually come within shaded area after this interval. If it does not, the nose should be repacked.

Upon the termination of the treatment (ten minutes) which is shown by the automatic timer in the middle of the panel board cutting off, the electrode should be removed from nose and the nasal packing removed. The membrane at this time has a whitish and shrunken appearance, and I have found that reaction is considerably lessened by mopping nupercain or pantocain ointment over the membranes at this stage. A cotton plug is placed in the nostril to be removed within two hours. The patient is instructed to take an H. M. C. tablet when discomfort begins and repeat in two hours, if necessary.

Shortly after ionization the nasal mucous membrane begins to swell rapidly to complete occlusion and a thick white membrane forms. This begins to loosen about the third day and can either be blown out or removed on the fourth. Upon removing the membrane, the interior of the nose has a different appearance. Instead of the white edematous condition, it has a reddish and shrunken appearance and is in marked contrast to the untreated side. In order to check results on the cases treated in the past two years the following letter was mailed to fifteen patients, which is the number treated up to December, 1936, and a self-addressed card with questions as follows was enclosed with each letter.

Copy of Letter:

Dear Mrs. S.:

You were treated by Ionization in August, 1935, for hayfever. It is my purpose to determine, if possible, just what benefit patients so treated have received from this method of treatment. To this end I am asking that you answer the questions on the enclosed card and mail same back to me at your earliest convenience.

If you were not benefited let me know. If some benefit was obtained estimate same in your own words, or if cured simply say so.

Your cooperation and any comment you care to make will be appreciated.

Copy of Card—enclosed in letter:

How long had you had hayfever when treated?

What months during the year?

Results of treatment?

Comments:

Of the fifteen letters and cards sent out, thirteen cards were returned and they will be reported in the order in which they were received.

Case One. Mrs. S.

Question one: Duration of disease—*nine years.*

Question two: Months during year—*all year.*

Question three: Results—*cured.*

Comments: Since this treatment, still have asthma but it is milder and less frequent.

Case Two. Mrs. R.

Duration of disease: *Thirteen years.*

Months during year: *From July until freezing weather.*

Results of treatment: *Most satisfactory.*

Comments: Would advise any hayfever patient to

submit to this treatment as it has freed me of an uncomfortable as well as an unsightly ailment.

Case Three. Mrs. C.

Duration of disease: *Twelve or fifteen years.*

Months during year: *Practically the year 'round.*

Results of treatment: I have been greatly benefited by the treatment but cannot say I am entirely cured as I have symptoms at times.

Case Four. Mrs. T.

Duration of disease: *Fifteen years.*

Months during year: *August, September and October.*

Results: In 1935 (year of treatment) I had hayfever just as badly as in the past but in 1936 had only three days of discomfort.

Comments: I feel that the treatment benefited me because other hayfever sufferers whom I know had just as severe attacks in 1936 as in the past.

Case Five. Miss S.

Duration of disease: *Fifteen or sixteen years.*

Months during year: *August, September and October.*

Results of treatment: *Relieved but not cured.*

Comments: The treatment cured my hayfever for the season, but I had it again the following August. My hayfever was just about as severe as before. I took the treatment but did not last as long as before.

Case Six. Mrs. B.

Duration of disease: *Four years.*

Months during year: *Spring and fall.*

Results: Was entirely free of hayfever last fall.

Comments: Treatment has relieved a chronic sinus condition to a great extent; general health has been better.

Case Seven. Mr. S.

Duration of disease: *Four years.*

Months during year: *Approximately July first on to first frost.*

Results: Treatment has cured my eyes from burning and itching and my nose has been cured from being a water spigot. The continuous sneezing and feeling that I had taken a fresh cold has stopped.

Comments: Sincerely recommend that sufferers from hayfever take the Ionization treatment for quick and economical reasons. Unlike the treatment by serum when there are hundreds of causes, ionization I believe is almost sure.

Case Eight. Miss M.

Duration of disease: *Twelve years.*

Months during year: *Spring and summer.*

Results of treatment: I feel that I have been helped, but as it has not been long since that treatment I do not feel that I can say to what extent it has helped.

Case Nine. Mrs. R.

Duration of disease: *Twenty-five years.*

Months during year: *Anytime if I should take a little cold.*

Results: *Very satisfactory.* October and November I had several attacks but they were slight compared to former attacks. I have not sneezed since November, and I do not take cold easily.

Comments: I recommend the treatment to anyone suffering with hayfever.

Case Ten. Miss C.

Duration of disease: *About one year.*

Months during year: *Fall, winter and spring especially.*

Results: *Cured completely.*

Comments: Haven't been bothered with hayfever since treatment; would advise anyone who has this trouble to take the ionization treatment.

Case Eleven. Mr. J. S.

Duration of disease: *Three weeks.*

Months during year: *May and June.*

Results: *Very satisfactory.*

Comments: Condition cured. No recurrence of previous symptoms. Those three weeks of hayfever were intense suffering.

Case Twelve. Mr. G.

Duration of disease: *Eleven years.*

Months during year: *August.*

Results: *No appreciable result.*

Comments: Patient took treatment (only on one side of the nose) in September and his hayfever leaves late in September so really I don't think it had a fair chance. (Written by patient's father who is a physician.)

Case Thirteen. Miss D.

Duration of disease: *Two years.*

Months during year: *All year; not as severe in winter.*

Results: *Getting on fine.*

Comment: Condition was once so severe was unable to rest at night. Now am resting perfectly every night since treatment.

Case Fourteen. (Patient did not return card).

A letter received from this patient, however, a little more than a year after treatment states that she was entirely cured. This patient moved from city shortly after treatment, and I am quite sure she did not receive the letter and card which were sent her. She had had her hayfever for twenty-five years and she had reached the point that she could not lie down at night and was seldom free from symptoms.

Case Fifteen. (Did not return card).

This woman was badly in need of a submucous resection which she refused to have done. I am confident that had this been done, her result would have been much better.

SUMMARY

A brief review of the above cases is rather interesting. *Cases one, two, six, seven, nine, ten, eleven, thirteen and fourteen* state without reservations that they were cured by the treatment. In *case two* it was necessary to give the second ionization. This gives us a total of nine cures out of a possible fifteen. There is some doubt as to the benefit received in *cases three, four, five, and eight*. *Case three* presented a very bad picture. There was in addition to the allergic manifestation a very marked nasal obstruction with an old perforation in the septum. There was a severe infection in the right antrum and a mild infection in the left. There were polyps in the right nostril. Her sinuses were irrigated until cleared and the polyps removed. Her allergic symptoms persisted, however, and were promptly checked by ionization, although it was given with misgivings and much difficulty. She was almost symptom-free until February of this year when her son died of pneumonia and she underwent considerable exposure and worry throughout his illness. Her sinuses filled again and necessitated several washings. Just how much benefit she received from ionization is difficult to say. *Case four* stated she received little benefit the first season, but had only three days of discomfort the following year. In view of the fact that this patient had suffered from hayfever for fifteen consecutive years, one is justified in assuming that the poor results the first season could have been due to a sinus condition along with her hayfever and that her hayfever was cured by the ionization. *Case five* obtained immediate relief the first season, and she was active at the time of treatment but had a return of symptoms the following year. This case

should by all means have a second ionization just as was done with *case two*. *Case eight* had a long period of sinus infection and had had several operations on the nose, including submucous resection, double windows and numerous bites on the middle turbinates. She had definite allergic symptoms as manifested by watering of the eyes, frequent sneezing attacks and a watery nasal discharge. Her statement is that she has been helped but does not consider the interval since treatment long enough to form an intelligent opinion as to benefits. *Case twelve*, a college student, badly allergic for a period

of eleven years, with disturbing symptoms, was at college when first treatment was given and did not return for second, although father who is a physician advises that he is still an active hayfever sufferer. This case is of no value in so far as conclusions are concerned because he had only one side of the nose treated. *Case fifteen* did not return the card but from conversations both with patient and with her husband, I am inclined to think that she should be classed as a failure. She was badly in need of a submucous resection which she refused to have.

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MANAGEMENT OF INOPERABLE CARCINOMATA.*

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Many so-called inoperable carcinomata are not inoperable at all. The large fixed carcinoma of the stomach with its involved adjacent glands is often changed into one which is easily removable by the simple expedient of gastro-jejunostomy which affords rest and drainage for the involved area. A formidable adherent cancer of the sigmoid becomes amenable to surgical excision six weeks after a strategically placed colostomy. A cancer involving the breast and the axillary glands may be removed late in the disease provided there is no lung metastasis. All of us who are experienced in cancer surgery have been surprised from time to time to have our effort rewarded after we have attacked an apparently hopeless case. There are, however, many cases which have progressed so far and have involved so many other structures that they must be placed in the category of inoperable carcinomata. I think that it would have been better for our patients and ourselves if we had not been impressed by our textbooks when we were students with the symptoms "pain and emaciation" in advanced cancer. I have not found pain to be an outstanding symptom in any stage of cancer, except when the physiological functions of hollow organs were interfered with or when the cancer was so placed that rest for the part could not be had. For instance, cancers of the stomach, bladder, and rectum are painful as soon as emptying is interfered with, and cancer of

the tongue is painful early because it is difficult to secure rest from movement, swallowing, etc.

Emaciation is present when alimentation and absorption are not normal. The mechanical presence of the cancer or the odor and pain and drugs for its relief cause anorexia and consequent emaciation. I have seen patients die of cancer of the breast and of the skin where weight was not materially off.

During an experience of fourteen years while I was chief of staff of what is now Gallinger Hospital in Washington, I examined upwards of seventy thousand patients. Among them was a fair number of persons sent there from other hospitals to die from inoperable carcinomata. In those days (1914 to 1928) the City Hospital was the junk pile for the hospitals in the city and most of the five thousand patients sent there each year were the unwanted or hopeless cases which occurred in the city. I observed at that time many inoperable carcinomata of the breast, uterus, stomach, skin, tongue, rectum and lung. These patients were discouraged, weak, anemic, some in pain, and many giving off the odor of rotting flesh, which added to their misery and to the discomfort of those about them.

Their course in the hospital was about as follows: After means were taken to reduce or eliminate the odor and the pain and after the administration of iron injections and tonic medication, they would eat fairly well, become less discouraged, and appear to enjoy the sunshine and fresh air for awhile.

*Read before the Virginia, Maryland, and District of Columbia Medical Society, May 19, 1937, at Leesburg, Va.

Then, without apparent cause, they would have a gastro-intestinal upset, refuse food for days and become markedly weaker. Upon recovery from this illness they would fail to regain their lost ground, but would again take interest in life and their food. After a few days or weeks this cycle would be repeated each time leaving them weaker until unconsciousness and death would occur.

Palliative treatment will, of course, depend upon the location of the cancer except that all these patients require encouragement, fresh air, sunshine, and tonic medication.

Cancers located in the tongue often require gastrostomy for feeding and sometimes tracheotomy for laryngeal obstruction. Stomach cancers do better after gastro-enterostomy. Colon and rectal cancers are relieved by strategically placed enterostomies; bladder cancers, cystostomy with abdominal drainage.

Cancers involving large nerve trunks or areas which cannot be treated otherwise require nerve block, either near the cancer or posterior to the spinal cord where they enter to carry sensory impulses to the brain.

Some of the most malodorous cancers occur in the vagina and the breast, and I suggest two measures for the relief of the odor. I have found it satisfactory to excise the sloughing breast with an actual cautery and, after burning the base, either do a sliding skin graft, or allow it to granulate. If the breast is not cauterized, I have used potassium permanganate 1 to 400 compresses changed twice daily, or, what I think is more effective, ordinary granulated sugar, enough to fill the cancer area, changed twice daily.

The cautery is useful in cervical cancer followed by tampons of a syrup made by heating sugar and water changed twice daily. It is surprising how this treatment reduces the odor. And it is remarkable how the reduction of the odor restores the self-respect and good spirits of the patient. We tried most of the analgesic preparations and found Schlesinger's solution to be by far the best. Schlesinger's solution is composed of—

| | | |
|------------------------|-------|-------------------|
| Morphine Hydrochloride | ----- | grs. x |
| Dionin | ----- | grs. xx |
| Hyoscine Hydrobrom. | ----- | gr. $\frac{1}{8}$ |
| Distill Water qs ad | ----- | m. 500 |

The dose is four minims by hypodermic, slowly increased to twenty minims. We found that the dose

could be increased very slowly and that the reaction of the patients was better on this preparation.

Also hypodermic tablets—

| | | |
|------------------------|-------|-----------|
| Morphine Hydrochloride | ----- | gr. 1/10 |
| Dionin | ----- | gr. 1/5 |
| Hyoscine Hydrobrom. | ----- | gr. 1/800 |

Each tablet is the equivalent of five minims Schlesinger's solution.

One word is required about the administration of barbital preparations—"Don't." After a few doses the mind is disturbed and illusions and hallucinations make patients difficult to control.

Much can be done to increase the comfort and prolong the life of persons with inoperable carcinoma, and it is our duty as physicians to employ all possible measures to relieve their mental and physical distress.

Case 1.—Mrs. M. L. consulted me on December 25, 1936, at her home for a pain which involved the crest of the right ilium, the right lumbar muscles and the epigastrium. The pain had been present for thirty-six hours and was becoming more intense. She was groaning and turning from side to side trying to relieve herself. A heating pad which was effective at first was not effective at this time. She was eighty-three years of age, small of frame and quite emaciated. There was no distention of the abdomen. She had not vomited, there were no masses nor enlarged glands which could be felt. The case appeared to me one of ureteral obstruction.

She told me that she had had similar attacks at intervals of three or four weeks for one year. She was relieved by $\frac{1}{4}$ gr. morphine, and a urinalysis was made the following morning. This was negative for blood and for other gross pathology. She refused to go to a hospital for investigation, and, after a day or so, left her bed and resumed her household duties which included going to market. About ten days later I was called and found her symptoms to be the same as on my first visit. The symptoms disappeared after twenty-four hours.

On January 24, 1937, I persuaded her to go to the hospital for X-ray study. A carcinoma involving the pylorus was discovered. She returned to her home and the attacks of pain became more frequent, but now involved only the epigastrium. Vomiting began and continued almost daily. I proposed to do a gastro-enterostomy to give her more comfort, but she refused this until May 8, 1937. At this

time her weight was seventy-two, which was ten pounds lighter than she was in January. Avertin anesthesia with ethylene was very satisfactory as anesthetic and the stomach was explored and the X-ray findings were proven. The cancer involved the lower one-third of the stomach. A posterior gastro-jejunostomy was performed and the patient returned to bed.

Since the operation the patient has had no pain and no vomiting. For a few days there was some gastric distention which was relieved by the Fowler position. At this time she is eating her food and enjoying it. She is without discomfort and I look for her to gain weight, and last months longer than was otherwise possible.

Case 2.—Miss M. S. consulted me on April 20, 1937, for abdominal pain, vomiting, and abdominal distention. She was seventy-two years old, and told me that she had been operated upon in Pennsylvania in September for a bleeding "fibroid" uterus and that a hysterectomy had been done. She was in good health after her convalescence until four weeks before I saw her. During the past four weeks she has been extremely constipated, has had much gas and later has vomited once a day. She has been passing blood per rectum for four weeks.

Miss S. was a small thin, but not emaciated woman whose abdomen was moderately and generally distended. She has lost twenty pounds in

the last month. Pain was present on deep palpation over the sigmoid and more deep resistance was felt there than in other parts of the abdomen. Her recent median scar was present.

This case was either a cancer or an obstructing adhesion. A portable X-ray was taken on the following day and a large cancer of the sigmoid was found. I telephoned the Pennsylvania surgeon who told me that he removed a carcinomatous uterus in September and that the left tube was adherent to the sigmoid and that the pathologist found the tube to be cancerous also.

On May 4, 1937, I made a left para-rectus incision and explored the abdomen. The left side was the site of an adherent mass involving the descending colon and sigmoid about the size of a small grapefruit. Obstruction was not complete, and a loop of colon was delivered and sutured to the peritoneum and skin preliminary to a colostomy. Three days later a colostomy was performed in bed without anesthesia and with a cautery. Great relief was experienced after this procedure and the patient is now being X-rayed in an attempt to lessen the size of the tumor with the idea of attempting its removal in two or three months. This patient is without distress and is happier than she has been since her trouble manifested itself in March of this year.

1915 Billmore Street, N. W.

EARLY ADVENTURES IN PUBLIC HEALTH IN VIRGINIA.*

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FOREWORD: The following paper is an expansion of certain short radio talks recently made over WRVA, Richmond, Virginia, in the period "On the Air" donated by that station to the Departments of Public Health and Welfare at the noon hour on the second and fourth Mondays. The subject matter is or should be of special interest to Virginia physicians.

EXHIBIT OF MEDICAL PROGRESS: Citizens of Virginia, especially her physicians, who do not visit

the exhibit of Medical Progress prepared for the Richmond Bicentennial and now† on display at the beautiful home of the Richmond Academy of Medicine, will miss seeing a wonderfully interesting, informative and colorful panorama of the history of Virginia medicine. A look at the Medical College of Virginia's part in that exhibit, will alone repay any one's time and will certainly stir in the breasts of old Richmonders a deep pride in the extraordinary development of a College long devoted to scientific instruction in the Medical Arts, which now has emerged into the full light of its long deserved place in the sun.

*Read at meeting of the Southside Virginia Medical Association in Petersburg, June 15, 1937.

†Exhibit closed September 30, 1937.

While the exhibit in all of its parts shows graphically, as it is supposed to do, the steps in Richmond's advance in Scientific Medicine, Curative and Preventive, to those who have kept in touch with state medical matters through the years, it clearly shows the commanding place the capital of the state has occupied in the evolution of medicine from the "Noble Art" as Hippocrates called it, to the "Nobler Science" of increasing exactness and life-saving possibilities.

Among the exhibits that challenge attention and to which I especially wish to direct attention is the portrait gallery of Richmond physicians, and not only to the well-painted portraits of distinguished medical men living and dead but the photographic display of very many of them, loved of old and long gone to their shining reward, and the surprisingly complete exhibit of photographs of living Richmond practitioners.

The portraits of those who have served and are serving the Medical College of Virginia as teachers of medicine are appropriately placed in sequence in the booths devoted to the subjects taught by them. In this array are found distinguished Richmond men who have served the State upon its successive Boards of Health and upon whose devoted unpaid service in the cause of preventive medicine, Virginia's superior health situation among the states is primarily due. Perhaps the most significant "Adventure in Prevention" was the creation of the first State Board of Health of Virginia.

FIRST BOARD OF HEALTH: On the initiative of Dr. James L. Cabell of the Medical Faculty of the University of Virginia, the Medical Society of Virginia in the fall of 1871 sponsored a bill to establish a "State Board of Health and Statistics" to endeavor to control the spread of contagious disease so prevalent in the Commonwealth, and by hard work secured its passage, the bill being signed by the Governor, Gilbert C. Walker, February 13, 1872. The Board consisted of seven physicians and was the third State Board of Health to be formed in the United States—California and Massachusetts being only a year or two ahead of Virginia.

Four well-known Richmond physicians were placed upon the Board, Dr. J. Grattan Cabell, Dr. L. S. Joynes, Dr. George Ross and Dr. Landon B. Edwards. The other members were Dr. J. W. Lawson of Isle of Wight, Dr. A. M. Fauntleroy of

Staunton and Dr. James L. Cabell of the University of Virginia, the last named being president.

Dr. Landon Edwards was appointed from Lynchburg, but shortly thereafter moved to Richmond. He was perhaps the best known physician in Virginia for a third of a century and by reason of his charming personality, his ability as a physician, as a medical editor, and as a secretary of the Medical Society of Virginia for many years endeared himself to all and won the abiding respect of the medical profession and all others with whom he came into contact. He was a member (the only one) who served on Virginia's first two Boards of Health. Dr. James L. Cabell, the moving *spirit* of this Virginia's first adventure in health, had the distinction also, among many others of his long and fruitful life, of being appointed president of the first national Board of Health ever organized. However, it is not my purpose at this time to indulge in eulogy of those who in early years pioneered in the public health field in Virginia and laid the foundation upon which others have built so splendidly. It would hardly be possible to name them all, much less do justice to them.

LEADERSHIP: The leadership in Public Health which Richmond furnished at this period and in subsequent years was pronounced and today still is dominant. It should be remembered that at the time this Board was formed over sixty-four years ago, Louis Pasteur of France and the world had not made his discovery of the relation of germ life to disease. The results of observation, experience and the application of rule-of-thumb methods were the main reliance of the doctors in cure, and in prevention of contagious sickness. Except for vaccination against smallpox during a scare, quarantining the patient and moving people away from the vicinity, nothing was done to control disease, and these recourses were not always easily available. Moreover, rarely were they ever applied until a disease became epidemic and the citizens became alarmed and demanded action. Smallpox, typhoid fever, dysentery and summer complaint, malaria, frequently of malignant type, diphtheria, scarlet fever, meningitis and rampant tuberculosis, along with our present plagues of influenza, measles, infantile paralysis, and venereal disease, in season and out, remained unchecked amid a population more or less resigned to endemic infectious disease as to the inevitable will of God.

In the light of the virtual eradication of some of the diseases named and the control of most of the others, it is hard for this generation to appreciate the matter-of-course way the public accepted the disease situation of that time. The realistic doctors, however, would not accept it and did not rest until the State at least made a motion toward doing something about it.

A LEGISLATIVE "JOKER": When the Board of Health bill, however, was up for passage, some legislative jokester or pinch-penny ignoramus—there was an overplus of that type in the 1872 legislature—secured an amendment to it, removing the small appropriation from the act in the following words, "The State Board of Health (thus created) shall in no way be a charge upon the State."

The bill was looked upon by the citizens generally and politicians particularly as a fad of college professors and theorists and not in the domain of practical politics, but to humor an influential group of well-meaning visionaries as they thought, the bill was passed, but in such shape, that if the Board attempted to do anything affective to change the existing disease situation, it must pay its own expenses. It was beyond the belief of the legislators of that day, that any group of citizens would seriously undertake to develop an effective organization to destroy by wholesale the sources of their own income. The carpetbagger and the scalawag were in the saddle at that time it must be remembered. Their idea apparently was, that though they could not see him there must be a "nigger in the woodpile" somewhere.

The Board elected a Richmond physician Dr. L. S. Joynes as Secretary and struggled along for six or eight years with a skeleton organization only, meeting annually with the Medical Society of Virginia. It appealed, with the support of the organized medical profession, to legislature after legislature for funds to enable it to do its job, but without avail, so the Board at length resigned in a body. This closed the first noble adventure of Virginia doctors in state-wide disease prevention.

"BUSINESS" TO THE RESCUE: More than twenty years later in the spring of 1893, when Asiatic cholera was raging in Europe and threatened to spread to the United States and to Virginia which was utterly unprepared to combat it, the Richmond Chamber of Commerce, an organization of keen

business men, then as now, and a group to whom Governors always listen with respect, realized how disastrous to the commercial interests of the State would be a plague of cholera, and formed a committee to wait upon the Governor and ask him to revive the State Board of Health under the existing law and furnish some money to take such steps as might be necessary in the emergency.

Governor Philip W McKinney acted promptly and appointed a State Board and from the State Contingent Fund provided a modest amount for expenses, and the Richmond Chamber supplemented it with more. The Board of Health consisted of Dr. Rawley W. Martin of Lynchburg, Dr. Robert J. Preston of Marion, Dr. Paul B. Barringer, University of Virginia, Dr. James Parrish of Portsmouth, Drs. Landon B. Edwards, Hugh M. Taylor, and Paulus A. Irving all of Richmond. Dr. Irving was secretary and operated under the old inadequate 1872 law.

Thus began the second great adventure in Public Health in Virginia, an adventure which proved not only of immense importance in itself, but sowed the seed of fruitful health education, from which in time grew the present State Health Department, the harvest of health of which Virginians have long been the beneficiaries.

A ROCKY ROAD: I wish I could say that from this point onward the cause of public health found plain sailing. This unfortunately was not the case. The cholera situation in Europe abated and the alarm in this country, which stirred the Governor of Virginia to action, subsided. By dint of careful inspection and quarantine at all sea-ports, and by the dissemination of information as to the known methods of spread of cholera, the United States escaped the scourge. The new Board of Health, the second in Virginia history, operating under the old law with its limited powers and most meagre, temporary resources, did its part. Dr. Paul B. Barringer of the University of Virginia, the only survivor today of that distinguished group of physicians appointed by Governor McKinney to the Board, was deputized to prepare a pamphlet on cholera for general distribution which amply covered what was then known about this death-dealing pestilence. This pamphlet was widely circulated, and for a time every community was on the alert, but like the cry of wolf in the old story, when there

was no wolf, the public lost interest since the cholera wolf did not appear. They failed to appreciate the always present and familiar danger from typhoid fever wolves and the dysentery and malaria wild beasts that were already tearing away at the health and lives of every community in the State and crippling and slaying Virginians by thousands every year. The Board of Health, a highly competent group of skilled scientists, were ready to hunt down these deadly dangers, but had no appropriation for carrying on. The resources of the Board of Health consisted mainly of a deep concern for the serious plight of the public in regard to diseases, particularly those of the summer-time. They possessed knowledge in regard to the best way known to prevent and control the worst of them, and had a complete willingness to work for nothing in directing the control work. They, however, only modestly asked that they be provided with one salary for a competent secretary and necessary expenses to enable them to gather the facts about prevalent diseases early enough to be of help in preventing their spread.

BRICKS WITHOUT STRAW: Several years passed and two more legislatures came into power (1896) before even a meagre appropriation of \$2,000 per year was available to assist in carrying out the Board's purposes. This amount was too little to insure the employment of a competent whole time clerk, much less collect the information desired, print and distribute preventive information to the doctors and to the public. The Board of Health, however, under the presidency of Dr. Rawley W. Martin of Lynchburg with Dr. Paulus A. Irving of Richmond (and Farmville) as administrator, undertook to try their best "to make bricks without straw" (not always an impossible task). A state-wide system of local volunteer physician Boards of Health was set up, and in a few years by persistence in appeal, aided by timely cases of suspected yellow fever at Hampton, and an increase of smallpox in the State secured a better health law (1900) and an appropriation of \$5,000 per year.

Great credit for this result is due Dr. Charles R. Grandy of Norfolk who framed the bill and indefatigably worked for it, and to Drs. A. S. Priddy, of Charlotte and George W. Le Cato of Accomac, members respectively of the House and Senate who introduced it, and secured its passage. Dr. Rawley

W. Martin had the distinction of being not only a physician of exceptional ability and note, but a great citizen and an intrepid soldier. As Lieutenant-Colonel of the 53rd Virginia Regiment, at the head of his troops, he took part in the gallant charge of Pickett's Division that immortalized itself at Gettysburg, he being the first one to scale the stone wall on that fateful day, falling wounded, all but to death, within the ranks of the fortified enemy.* His interest and research in the whole broad field of medicine made him quick to see the importance of the preventive side of his profession and following Pasteur's discovery of the germ origin of contagious disease, he sought by every means in his power to secure the application of this life-saving knowledge to his disease burdened state.

The task needed a man of his heroic qualities of mind and heart for it demanded not only the pioneer spirit in unusual degree, but the courage, the fortitude and determination to persist under many discouragements, for many years. The revolutionary ideas involved in the theory of the germ origin of disease were known generally only to medical men, and were not accepted by large numbers of them, almost all of whom were taught differently at medical college. A campaign of education had to be instituted among physicians first, since without them real progress in disease prevention was impossible, then as now. The Board had no power to enforce its views under the existing law. It must secure cooperation and proper cooperation is impossible except from informed and convinced people. As is the way with all revolutionary movements many people in high as well as low station had to die before the public was ready to accept as truth the doctrine that hitherto unknown pathogenic germs were the cause of infectious diseases.

Time, however, "Marches on." So year after year went by, with faithful Dr. Paulus A. Irving, Secretary, a devoted medical and public health educator at the helm conducting the Board's campaign.

FRUITFUL SEEDS OF SLOW GROWTH: No physician can read Dr. Irving's monthly bulletins from May 1896 to July 1908 without a feeling of great pride in the leadership of the Virginia medical profession then and through the years since, for it must be remembered that the law under which

*See *Virginia Medical Semi-Monthly*, October, 1902, Presidential address of R. S. Martin of Stuart.

the Board operated was the creation of the Medical Society of Virginia, whose active and constructive support of health work has never failed. Virginia and the medical profession owe a great debt of honor and of gratitude to the Board of Health of those years and to Dr. Paulus A. Irving, its executive officer. Dr. Irving—that stalwart figure, who for fifteen years at little pay and with virtually no assistance except from his local volunteer boards of health, kept the torch of public health burning in every part of Virginia! It is to the records found in the old files of the bulletins sent out by him that I am indebted for many of the facts in this brief account of a truly heroic period in public health history. For fifteen years the educational campaign went on but owing to the lack of mandate in the law, and insufficient funds with which to fight disease adequately, even had there been legal warrant for it, no progress of any importance in disease reduction was discernible. Such figures as were available were wholly unreliable, owing to the failure of many boards to report regularly, and those that did reported usually in general terms. For instance, in June 1902, from the secretary of the excellent local Board of Health of a county not far from Richmond, the following report came—"2 cases whooping cough, 2 cases of hemorrhagic malaria fever, 4 cases of tuberculosis, 1 case of typhoid fever. Diarrhoea, dysentery, cholera infantum and cholera morbus prevailing." In the same month, a report from another county, including a large town, says "whooping cough prevalent, a few cases of measles, one membranous croup, several cases of tuberculosis, three cases of typhoid fever, seasonal diseases prevailing, sanitary condition only fair." From another—"One case of whooping cough, one case of tuberculosis, ten cases of smallpox, epidemic of dysentery, sanitation very bad." from a large number of county boards, the notation always was "no report."

A NEW DEAL: The reports from the counties reporting, the record shows, were becoming more and more informative and specific, but since nothing effective was ever done about the conditions reported, or indeed could be done under existing cir-

cumstances, certain progressive physicians of the State among them, Dr. Ennion G. Williams who as a member of the Richmond City Council had secured a Health Department for that city, felt that the time had come for expansion of the activities of the State Board of Health, securing, if possible, more power and money. An important item in the bill approved by the Board of Health and presented to the General Assembly of 1908 was a paragraph making the Medical Society of Virginia directly responsible for the conduct of health affairs in the State, much as in North Carolina and Alabama today. The bill created much interest and won many friends among the legislators but failed of passage. Unfortunately the bill to abolish the license tax on physicians was brought forward at the same time and suffered defeat. As soon as the vote was recorded against the bills as endorsed by the medical profession of the State, Captain W. W. Baker of Hallsboro, member of the House of Delegates from Chesterfield introduced a bill almost identical with the Board of Health bill just defeated but carrying double the appropriation asked for and providing for a State Board of Health with a Commissioner appointed by the Governor, and in addition establishing a State Sanatorium for the treatment of tuberculosis. This bill which was passed as an emergency measure in the closing hours of the session was signed by Governor Claude A. Swanson and became a law. Thus, though not exactly in the form desired, the State Board of Health's major objectives before the Assembly were achieved and so ended Virginia's second great adventure in disease prevention, ushering in the present era of disease control which after twenty-nine years of active service to the State, in successful attack upon the causes of infectious disease wherever found, yet holds in remarkable degree the confidence and support of the medical profession.

Good sportsmanship, good citizenship and self-abnegation on the part of the physicians could scarcely go further. The make-up of the new Board of Health and its activities to the present time is another and a longer story.

STAB WOUND OF THE HEART WITH CARDIAC TAMPONADE— REPORT OF A CASE.

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Traumatic wounds of the heart are not a rare happening, as they are of constant daily occurrence; however, operations on the heart following traumatic wounds are still of sufficient rarity to warrant this report.

Except in the extremely rare case, penetrating wounds of the heart have but one outcome, and that is death. However, in those cases in which a penetrating wound of the heart does occur in which the posterior wall of the pericardium is left intact, and the instrument inflicting the wound is not of sufficient size as to cause a gross opening in the chest wall, there is still a remote possibility of rendering aid, that is, providing too great an interval does not elapse following the injury, a fairly early diagnosis is made, and a surgeon is at hand who has the courage of his convictions and the willingness to operate at the expense of an increase in his surgical mortality rate.

Penetrating wounds of the heart are usually the result of violence, occurring in out of the way places, so that when the patient is seen by the physician, the individual is either just expiring or has expired shortly before the arrival of the physician or coroner. However, in those cases which are seen early enough, there is possibility of assistance.

Varying with the severity of the chest injury the subsequent cardiac damage depends on the point of impact. Various types and degrees of injury to the heart and associated structure may take place. When there is a rupture of the heart following trauma to the chest, there is a bursting of the heart due to the compression of the thorax. Bursting may also be caused by any force causing a sudden rise of intracardiac pressure. In cases of bursting of the heart or of contusion sufficient to cause rupture, death is immediate. Death due to rupture of the heart, presents characteristic shock, complete collapse, feeble or no pulse, falling arterial and venous pressure and the presence of free blood on tapping the pericardium. If the injury involves the aorta or large veins, death occurs from exsanguination, by

hemorrhage both into the pericardium and spilling into the thoracic cavity. In the penetrating wounds of the heart in which the anterior pericardium only is involved, leaving the posterior pericardium intact, death may be immediate or within a few minutes to an hour or more, depending on the severity of cardiac damage. Death does not occur from hemorrhage but from cardiac tamponade, due to the rapid accumulation of blood in the pericardial sac. As a result of the blood accumulation, a point is finally reached at which the intrapericardial pressure will close the anterior pericardial opening by pressure against the thoracic wall. The pressure within the pericardium will continue to increase until it equals the pressure in the auricles and they cease to function, circulation stops, and life cannot be maintained. Clinical findings are increased cardiac dullness, diminution in arterial pressure, rise in venous pressure until arterial and venous pressure are equal, bloody fluid on paracentesis of pericardial sac, extreme shock, no pulse and finding of external evidence of trauma. Doubtless an X-ray would reveal the characteristic findings of a pericardial effusion or exudate.

REPORT OF CASE

Colored male, aged 20 years, admitted February 20, 1937. At approximately 10:35 P. M., February 20, 1937, an emergency call came to the hospital relative to "man hurt" on the street. The ambulance responded and the patient was found lying on the sidewalk unconscious. Information rendered at the scene was to the effect that the patient had been "stabbed several minutes ago." The patient at this time was in a dyspneic state and having considerable shock. Superficial examination revealed a large splotch of blood on the clothes in the region of the left chest. The patient was placed in the ambulance and brought to the hospital at approximately 10:50 P. M. A more thorough examination at this time revealed a 20-year old colored male, well-developed and well-nourished, unconscious and in extreme shock. Examination of the

body revealed two stab wounds of about the same size, one-half inch in length, one on the antero-lateral surface of the left deltoid region and the other on the left chest wall at the fifth intercostal space and about one inch within the nipple line. No pulse could be obtained at the radials and no heart sounds detected. The blood pressure could not be obtained, it being in the zero range. The respiration, while of a dyspneic quality, was not rapid but was of moderate depth. There was no bleeding from either stab wound.

A diagnosis was made of stab wound of the heart with cardiac tamponade. The patient was given fifteen grains of caffeine-sodio benzoate and taken to the operating room immediately, where an intravenous injection of 1,000 cc. normal saline was started, and a fourth-grain morphine given, together with a fiftieth of strychnine.

Operation was started at 11:20 P. M. without anesthetic—local or general—and an incision was made at the left costo-sternal border, running perpendicularly across the fourth, fifth and sixth ribs and parallel along the under margin of the sixth rib. Approximately two inches of the exposed ribs were reflected outward, exposing the pericardial sac which was opened, revealing the pericardial cavity filled with fresh blood. This was immediately evacuated and the heart grasped. The exposed heart at this stage had an extremely rapid rate. Blood continued to fill the pericardial sac, but, because of the rapidity of flow, it could not be discerned from whence it came until the heart was brought into better view. A laceration was made visible at the apex, which extended completely through the left ventricle, from the anterior through the posterior surfaces. Using No. 1 chromic catgut the lacerations were sutured, after which the pericardial sac was closed. Considerable blood escaped into the left thoracic cavity which had been inadvertently opened, causing a complete hemo-pneumothorax. As much blood as possible was aspirated through the thoracic opening and then the opening was closed by suturing the reflected ribs into place by means of No. 1 chromic catgut sutures through the periosteum and intercostal muscles. The skin was closed by silk-worm interrupted sutures. One soft rubber penrose drain was left in the pericardial sac. The operation was over at 11:40 P. M.

Patient was taken to the ward. The pulse was of good volume, irregular and having a rate

of 100. Respiration was 36, and temperature 94. An intravenous injection of 1,000 cc. normal saline was started, and gr. $7\frac{1}{2}$ caffeine sodio-benzoate given, this latter being repeated every three hours. Morphine sulphate gr. $\frac{1}{6}$ was ordered every 3-4 hours to maintain respiration around 18-20 per minute and for pain. At 3:00 A. M. patient began to regain consciousness and became rational and complained of thirst. Sips of tap water were given. At 7:45 A. M. patient vomited bloody-colored fluid and again at 9:30 A. M., there being an emesis of considerable bloody-colored fluid, after which he did not vomit again. From the first post-operative day on to the time of death on the fourth post-operative night, the patient was conscious and had a pulse which varied between 100 and 144, respiration between 30 and 48, while the temperature, which was 94 immediately after operation, varied between 99 and 101.5 at time of death. The patient complained at intervals of considerable pericardial pain which radiated down into the epigastrium, the pain being controlled by frequent doses of morphine. Death occurred at 4:10 A. M., February 25, 1937, four days after admission.

An autopsy was obtained and the following findings were reported by the hospital pathologist:

AUTOPSY REPORT

General Description: The body is that of a negro man about 20 years of age, about 5 feet 10 inches tall, and weighing approximately 150 pounds. Just to the left of the mid line and overlying the second, third and fourth ribs left is a recent incision with sutures in place. On pressure sero-purulent fluid exudes through the lower end of the incision. Rigor mortis has already set in.

Abdomen: On opening the abdomen the peritoneum is moist. No free fluid is present in the abdominal cavity. The intestines lie free. There is no obstruction; no evidence of inflammatory reaction demonstrated. The caecum, ascending and transverse colons are normal.

Stomach: The stomach is dilated and distended and on section contains a small amount of fluid and a large amount of gas.

Liver: The liver is normal in size, color and consistency. On section normal markings are demonstrated.

Spleen: The spleen shows no evidence of pathology other than an old healed infarct on the anterior surface.

Pancreas: The pancreas shows no changes.

Kidneys: The kidneys are normal in size. The capsule strips normally. On section the cortex and medulla markings are plainly seen. There is no congestion, no pus, no cysts, no stones.

Thorax: Lungs: On opening the thorax the left lung is completely collapsed and the visceral pleura contains a large amount of recent fibrinous exudate. The left pleural cavity contains approximately 4,000 c. c. of turbid bloody fluid. The right lung is well aërated. There is no consolidation and other than some slight congestion of the base shows no changes.

Heart: The pericardium has been recently sutured and is tightly adherent over the anterior surface of the left ventricle. The pericardial sac contains no fluid, no blood, and upon separating the pericardium leaves a roughened surface to both visceral and parietal pericardium. Just above the apex of the heart and in the left ventricle several sutures are

in place on both the anterior and posterior aspects of the heart. The suture lines are healed; no leak has taken place. The coronary artery shows no evidence of sclerosis. All valves are apparently competent.

ANATOMICAL DIAGNOSIS

1. Hemo-pneumo-pyo-thorax, left
2. Pericarditis
3. Stab wound left ventricle
4. Gastric dilatation.

CONCLUSION

The foregoing case was operated upon approximately one hour after injury was received. One case, of course, is no criteria of elapsing time that may pass before operation should be done, but it does show that relatively considerable time may elapse before death does occur from cardiac tamponade.

RHEUMATIC HEART DISEASE.*

R. BRYAN GRINNAN, JR., M. D.,
Norfolk, Virginia.

A disease which has an unknown etiology, with such diversified manifestations and resulting in a fair percentage of fatalities, necessarily excites widespread interest and the production of a voluminous literature. In this paper I shall try to bring up to date our present knowledge of heart disease of rheumatic origin and give some indication of its frequency in our own community.

Historically the correlation between inflammatory rheumatism and heart disease was first made by Jean Baptiste Bouillard in 1836, and as early as 1850 Botrel believed that all chorea was of rheumatic origin. Hillier in 1868 described the rheumatic nodule, and in 1888 Cheadle recognized the systemic nature of the disease, describing many of its widespread manifestations. In 1904 Aschoff made his classical description of the Aschoff nodule or body, placing the disease on a specific basis pathologically. A vast number of reports have been made as to the discovery of an etiological agent. In 1914, however, Rosenow of the Mayo Clinic isolated a diplostreptococcus from the blood, tonsils and joints

of rheumatic patients and believed this to be the cause of the disease. He reproduced arthritis, pericarditis and myocarditis in rabbits with the cultures. His work has never been accurately reproduced but nevertheless it must be seriously considered in the light of the undisputed fact that the disease is associated with streptococcus infections and certainly manifests in many ways the characteristics of a streptococcus invasion.

The incidence of rheumatic heart disease varies with the locality, being more frequent in the North Eastern States and less frequent in the South. It is almost non-existent in the tropics. It is less virulent in the warmer climates, has a milder course, with a more advanced age being reached by those with heart lesions, and fewer fatalities in the acute stage. The statistics then vary with the locality.

In New York City, in a survey¹ of over 160,000 children, 0.9 per cent were found to have organic heart disease and 43 per cent of these were of rheumatic origin. In New England² it was found to be present to the extent of 40 per cent of all heart disease and 93 per cent in all under 20 years of age.

*Read before the Norfolk County Medical Society, May 17, 1937.

To gain some idea of the incidence of the disease in Norfolk, Virginia, I have found that 40 cases of rheumatic heart disease were admitted to the Norfolk General Hospital in the three years 1934-35-36. Five, or 8 per cent of these were negroes. This was .25 per cent of all cases admitted and approximately 12 per cent of the total number of heart cases admitted. Twenty-five, or 62 per cent, were admitted because of cardiac failure and only six, or 15 per cent, were admitted with acute disease. Twenty-five, or 62 per cent, gave a history of tonsillitis, rheumatism or chorea. No history of any of these was obtained in the remaining 15 cases. The average age of these patients was 39 years. There were 7 deaths, 4 due to bacterial endocarditis and 3 to failure. Eighty per cent were born in Virginia or neighboring States. It has not been possible to find out if these patients contracted their rheumatic fever elsewhere than in Virginia but the incidence of those born in this general locality seems to indicate that most at least are Southerners and have lived in a climate similar to that of Virginia. These figures seem to indicate that the acute disease is relatively rare but I believe that that is somewhat misleading since most cases in a community such as ours would be mild and treated in the home by a private physician. The older age incidence in this series indicated the mildness of the disease and its more slowly progressive nature in a community where the so-called malignant rheumatic fever is rarely seen.

The etiology already briefly spoken of has recently been concisely but completely discussed by Drs. H. Sprague and Paul D. White in the *Journal A. M. A.*, November 2, 1935. In this they present its geographical locality, its common occurrence in the lower middle class, increased activity in winter and spring, familial tendency, optimal age, period of initial onset, and the reactivity of the disease by non-specific agents as making up the chief etiological leads of the disease. The disease may also occur in epidemic form, as during the war. No race seems to be exempt if they happen to live in a locality where the disease is common. The optimal age of onset is 5 to 20 years of age. But onset in persons of 40 to 50 years is not uncommon.

Chorea has for many years been considered a pre cursor of rheumatic heart disease. Its importance has recently been clarified by Drs. T. D. Jones and E. F. Bland, *Journal A. M. A.*, August 24,

1935. In this they found that in those patients with chorea alone the heart was involved in only 3 per cent, while in those with combined joint manifestations and chorea it was involved in 73 per cent. They concluded that chorea was a mild manifestation of rheumatic fever and not especially conducive to the development of heart disease.

The role played by scarlet fever in the cause of mitral disease is apparently unimportant. When it does occur it is usually associated with joint involvement. E. H. Place, in his article, Heart in Diphtheria and Scarlet Fever, *New England Journal of Medicine*, 1932, reaches the conclusion that benign endocarditis is the characteristic lesion and that myocarditis alone is rare, no well marked case being observed in several thousand listed.

The finding clinically and at autopsy of hearts presenting the characteristic lesions of rheumatic heart disease, where careful questioning has been unable to disclose any history of rheumatic fever, tonsillitis, sore throats, chorea, scarlet fever, or any vague growing pains or aches is another of the many stumbling blocks in arriving at an etiology. It has led to the classification of the so-called rheumatic type of heart disease and is just another of the many remarkable findings in an extraordinary disease.

In summation, it may be said that the disease is generally thought to be of non-hemolytic streptococcus origin. Whether the lesions in the heart are allergic manifestations of foci elsewhere in the body or are caused by the direct invasion of the organism is open to question. It occurs chiefly in persons of poor circumstances where there is more opportunity for infection and in localities where pulmonary and upper respiratory infections and tonsillitis are frequent diseases and especially where diseases of a streptococcus nature abound. The portal of entry is unknown but is usually considered to be the tonsils and nasopharynx.

The pathology of rheumatic heart disease is characterized by the specific Aschoff body, a periarterial inflammatory reaction of small round cells with a smaller collection of large giant cells. They may be scattered few or in large numbers. They go, leaving no evidence of their presence unless the illness is prolonged and scarring takes place. In the heart the mitral valves and myocardium are chiefly affected, with the aortic, tricuspid, and pulmonary

valves less frequently involved in the order named. Paul White gives the frequency as 62 per cent mitral involvement alone, 5 per cent aortic alone, and 33 per cent combined mitral and aortic. The tricuspid valve is very rarely involved, only once in his series of 933 cases. The pulmonary valve was not involved in any case in the same series.

The characteristic valvular lesion is the so-called verrucous vegetation along the valve margins composed of a thrombus made up chiefly of fibrin. The valves become thickened and adhere at their margins, resulting in a narrowing of the valvular opening. A shortening due to scarring of the chordae tendineae results in an imperfect closure of the valves so that an insufficiency also develops. The result is a stenosis and insufficiency which is almost always coexistent. The early myocarditis with dilatation of the heart usually results in a regurgitation, followed later by the stenosis and the characteristic diastolic murmur. The lesion of the aortic valves is almost identical. Here, too, the regurgitation usually precedes the stenosis. The lesion of one valve may be more predominate than the other and over-shadow it clinically. The combined aortic and mitral disease results in a picture which is a combination of the two, with the predominance of one resulting in a picture chiefly characteristic of the predominant lesion. The valvular damage results in tremendous cardiac enlargement and hypertrophy. In mitral disease the right ventricle and left auricle are chiefly enlarged with also some enlargement of the left ventricle. The characteristic result of the aortic lesion is immense enlargement of the left ventricle downward and to the left. Stenosis of the aortic valve results in less enlargement. The largest hearts known are usually due to aortic regurgitation. It is in aortic lesions that coronary disease is most apt to occur in conjunction with rheumatic hearts. Narrowing of their orifices combined with low diastolic pressure leads to anginal attacks and even sudden exodus due to occlusion of the mouths of the coronaries. The pericardium is frequently attacked, resulting in effusions and adhesions. The adhesions, while not frequent, are nevertheless important in causing constrictions or attachments that may result in failure later in life.

It should be said here that the heart disease is only one of the many manifestations of rheumatic fever which is actually a systemic disease involving

the pleurae, peritoneum, lungs, tendons, synovial membranes, kidneys, brain and skin, as well as the great vessels and smaller arteries in all parts of the body. The various manifestations of rheumatic fever will not be gone into, but suffice it to say that the characteristic lesion, the Aschoff body, is usually found in these other regions affected, indicating them to be of rheumatic origin.

The symptoms will be briefly reviewed. These may be those of simple heart failure and decompensation or of the acute disease presenting the picture of an overwhelming infection and rapidly failing heart.

In children the symptoms may simply be those of ill health and lack of energy with occasional fever at 99 or 100 with few or no joint manifestations. The heart in these cases is often seriously damaged without the child ever presenting the picture of rheumatism. The severe migratory joint symptoms are usually more manifest in older children and adults, and frequently in these cases the heart is less affected than in the child presenting a subacute or recurring acute heart infection. Symptoms may be absent entirely, or there may be anginal pain and vague discomfort in the region of the heart. There will be some easy fatigue and dyspnea depending on the extent of the activity of the heart disease. Orthopnea may be present. Palpitation may be a symptom in rhythm disturbances such as fibrillation tachycardia or extra systoles. Hemoptysis is not infrequent and may introduce congestion and failure due to stenosis. The symptoms of a failing heart may be brought on by the over taxation of the heart due to the valve deformities, pericardial adhesions or effusion. Frequently failure is precipitated by a recurring acute attack. Almost any type of acute infection or even pregnancy adding an additional load to the already overtaxed heart may be the inciter of failure. Fibrillation or other change in rhythm may usher in the decompensation.

The characteristic murmur of mitral regurgitation is the harsh or blowing systolic murmur heard best over the apex and transmitted to the axilla. The murmur of stenosis is the low pitched mid or late diastolic rumble extending sometimes up to and replacing the first sound. In a mitral stenosis regurgitation is almost always present as is also the reverse whether the pathognomonic murmur be audible or not. The murmur of aortic regurgitation

is a high pitched sound early in diastole, heard best over the base, and the diagnosis is made by correlating this finding with that of Corrigan pulse, wide pulse pressure and left ventricular hypertrophy. The murmur of stenosis of the aortic valve is a harsh systolic sound heard best over the base and usually transmitted upward to the neck. The pulse pressure is usually small in mitral stenosis and aortic stenosis.

The wider the insufficiency of the mitral valve the quieter the murmur becomes until in a valve that is completely incompetent there may be no murmur at all. It gives rise to the greatest amount of heart damage and the patients generally succumb early. The reverse is true in stenosis with regard to the murmur. Palpable thrills are often felt. Their presence depends upon the murmur. They have as a rule the same significance, usually being present when the murmurs are loudest. Mitral disease is of rheumatic origin in a great majority of cases, while in aortic disease it must share the honors with lues.

The signs of pericarditis with or without effusion may be the presenting picture. In the active illness fever may or may not be present. In the severer cases subcutaneous nodules are present and indicate activity. Erythema marginatum is also an indication of activity and purpura rheumatica, while an infrequent manifestation, is sometimes seen in the more malignant cases.

In the laboratory leukocytosis is a common finding, the count usually varying between 9,000 and 20,000. It is seldom higher than 20,000 unless complications are present. A moderate anemia of the secondary type is usually present in the active disease. The sedimentation rate is practically always increased and is used as an indication of activity. The blood culture is nearly always negative. The findings of a positive skin reaction to the intradermal injection of the toxic filtrate of the streptococcus has been reported but this needs further confirmation and study.

Urine is not as a rule unusual. Albuminuria is frequent in the presence of cardiac failure. The common picture in acute rheumatic fever is a trace of albumin, hyaline casts and occasional red cells. The fulminating cases occasionally present the picture of severe hemorrhagic nephritis.

The electrocardiogram demonstrates a certain

amount of partial heart block with a P R interval of .20 seconds or greater during the acute stage or it may show nothing. Recent reports by Robert L. Levy and H. G. Bruenn in New York indicate that the acute cases, even in the absence of a prolonged P R interval, may demonstrate in the chest lead an upright T wave. The T wave in the chest lead is normally inverted. They also considered a negative T deeper than 9 min. to be abnormal. The findings of a notched or monophasic Q R S, an elevated S T or a depressed S T of greater than 2 min. below the isoelectric line, are also abnormal but are not specific for rheumatic fever. In a recent number of the *Heart Journal*, Bruenn has reported on the causes of heart block in rheumatic hearts and concluded it to be of vagal origin in the acute cases. Various arrhythmias, if present, will also be demonstrated.

The X-ray picture is of little help in the early stages of the disease, but as enlargement takes place due to valvular lesions or pericarditis, changes may be demonstrated that are almost specific. The picture, of course, depends on the pathology. In mitral stenosis the characteristic picture is that of an enlarged and dilated left auricle and pulmonary conus with enlargement and hypertrophy of both the left and right ventricular shadows, especially the right. The aortic valve disease gives predominately a picture of left ventricular enlargement.

The course of rheumatic fever is usually chronic and recurrent. The earlier in life the illness develops the more severe is the heart damage. The greater the number of attacks the more marked is the pathology in the heart. In the young adult the onset of subacute bacterial endocarditis, congestive failure or fibrillation resulting in failure are the dangers. The first failure is usually the forerunner of another and limits the patient considerably in his activity. The average age given by White reached by the various lesions is 30 years for the mitral alone, 43 for aortic and 32 for combined aortic and mitral. The slight impairment derived from one or perhaps two attacks of mild rheumatic fever may give no handicaps at all to certain individuals.

The chief specific complications of the disease are auricular fibrillation, congestive failure, and subacute bacterial endocarditis. Embolism to the brain, hemoptysis and hoarseness are complications that are the result of thrombi in the left auricle, pulmonary congestion and recurrent laryngeal nerve

pressure. Any superimposed infection may complicate the illness. Pulmonary tuberculosis has been pointed out as an infrequent complication due, it is thought, to the pulmonary congestion resulting from mitral stenosis.

Treatment of rheumatic heart disease varies with the stage of the illness. There are no new methods of treatment that are satisfactory. The policy to follow must be determined by the activity of the disease. The active case must be kept in bed. Salicylates should be given regardless of the presence of joints because there are indications that the progress of the heart lesions are somewhat inhibited by the drug. Tolysin or neocinchophen has been used but is less effective. Serum treatment is still in the experimental stage. Vaccines have been administered but these too are of doubtful value. The patient should be placed on a nourishing diet as soon as possible. It should be high in vitamins, especially A and C. Reports³ recently indicate that vitamin C is important in the treatment of the disease and some⁴ more enthusiastic have ascribed its deficiency as the cause of the disease. This certainly needs further study and confirmation. In chorea bed rest is the most satisfactory therapy. Drugs are not indicated except sedatives when necessary to control the convulsive movements.

The care of the convalescent resolves itself into the management of a cardiac case and the prevention of recurrences. Foci of infection should be removed. Tonsillectomy is indicated when the acute condition has subsided. Removal to the tropics or subtropics, as practiced by T. D. Jones and his associates has met with remarkable success in arresting the subacute cases and inhibiting the progress of the disease. There is no rule to follow for exercise in those with cardiac damage; each is a law unto itself, but a case with active rheumatic fever should be kept in bed until all evidences of activity have disappeared.

In the realm of surgery the release of adhesions is indicated in the adhesive pericarditis. Paracentesis may be necessary in the advent of an effusion. Some of the patients with repeated failures

have had complete ablations of the thyroid to reduce their metabolism. Drs. Blumgart and Levine of Boston have reported on their work in this respect. The two cases that I have seen I cannot report on finally. One was done for repeated failure and this patient developed myxedema of a severe grade and had to be given thyroid. The other was operated upon for status anginosus. The angina was dramatically relieved for a while, but after some months returned.

In answer to the question, does the damaged heart get well, I refer you to an article by T. D. Jones and P. D. White⁵ in which they studied a thousand cases. In this review they found that the signs do regress and disappear in 8.3 per cent of cases, but concluded that the absence of murmurs did not necessarily preclude the presence of some small amount of disease of the valve orifices.

In conclusion, the survey of three years' admissions to the Norfolk General Hospital, although a small series, gives a percentage of rheumatic fever and rheumatic heart disease that is to be expected for this community in a midway zone. It indicates the presence of a mild heart damage since the average age of those living is above the average age of the limit reached by rheumatic heart disease *en masse*. In other respects the disease is quite similar to that found elsewhere. The small number of negroes—8 per cent in a hospital where the number of colored admissions is large—is not explained in view of the fact that the disease is supposed to be more frequent in individuals of poor circumstances.

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CONSERVATIVE TREATMENT OF PELVIC INFLAMMATION— A PRELIMINARY REPORT ON ELLIOTT THERAPY.*

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Richmond, Va.

To accomplish a result by a conservative method is preferable to accomplishing the same result by a radical procedure. To accomplish a better result by a conservative measure makes that measure all the more to be desired. Often in pelvic surgery the end does not justify the means. The ablation of the pelvic organs in part or *in toto* in a young woman is a matter of great seriousness, and all too often physical or social invalidism results. Pelvic infection is, in the great majority of cases, a self-limited disease, and only in a minority of cases is extirpation of the organs needed.

In pelvic infection the doctor's aim, often not recognized, should not be to mutilate the body by removing the diseased organs, but rather, where possible, to augment and speed the natural body processes which ultimately will eventuate in a resolution of the infection in the organs and in a restoration of health to the patient. Infection may be removed with the tubes and ovaries, but restoration of health and happiness to the patient often does not result. In its stead there is sometimes pain, sterility, and maladjustment.

Conservation in gynecology has had many advocates in the past. The cardinal form of treatment has been rest and the application of heat, as has been pointed out by Holden and Gurnee and others. The application of heat dates back at least to the year 450 B. C. when Hippocrates advocated the vaginal douche for the relief of pelvic pain. These authors point out that this method of treatment was forgotten for 1,000 years and then rediscovered and written about by Galen and Celsus, and that years later German physicians heated shot and poured it into the vagina, the better to obtain prolonged heat and greater distention. In our century Gellhorn applied the prolonged vaginal douche in which the patient, seated in a tub, was irrigated with a continuous flow of water at 110°, the vulva and perineum being protected by vaseline. In recent years there has been developed a method of appli-

cation of heat in pelvic infections which has surpassed all previous methods in effectiveness. Being of the opinion expressed in the two opening paragraphs of this article, we have welcomed this method as an effectual mode of application of conservative therapy.

This method of applying heat to the pelvis was devised by Dr. Charles Robert Elliott, of San Francisco, and the treatment has come to bear his name. It is administered by a machine known as the Elliott Treatment Regulator. By means of this machine a constant supply of hot water is circulated through an evenly distensible vaginal applicator made of latex, and so shaped that when distended it entirely distends and fills the vaginal cavity. It is self-retaining and radiates heat evenly and directly to all surfaces. The pressure and temperature are under constant control. The application for a prolonged period of a temperature of 130° Fahrenheit is possible by this method. This temperature is 31.4° Fahrenheit above body temperature and is considerably higher than any temperature which can be borne by the skin. This treatment takes advantage of the fact that the vaginal mucosa will stand temperatures much higher than those which can be borne by the skin of the abdomen, vulva, or perineum. Gellhorn stated that the maximum temperature which can be used on the skin is approximately 120° Fahrenheit, and that this temperature can be used only for a short time. A further advantage of this treatment is the distention of the vagina which permits all of its surface to come in direct and equal contact with the source of heat, and, furthermore, brings the source of heat closer to the rest of the pelvic structures. It has been shown in this treatment that with a temperature of 130° in the vagina, there is a reading of 104° in the urethral meatus, 104.2° in the bladder, 106° on the anterior rectal wall, and 112° in the cervix proper. The original body temperature rises only 0.4° (Holden). The gonococcus is said to be killed in a few hours by a temperature of 106°, and in 10 minutes by a temperature of 122°.

The physiological changes produced by treatment

From the Departments of Surgery and Gynecology, Medical College of Virginia.

*Read before the Halifax County (North Carolina) Medical Society, May 10, 1937.

are increased hyperemia, leucocytosis, exudation, and absorption.

At the Medical College of Virginia the treatment routine is as follows:

The bladder and rectum are empty before treatment. The patient lies on her back with hips elevated on a pillow. The undistended applicator is lubricated and inserted by the gloved hand into the vagina. The tubing is supported so that there is no pull on the perineum. The applicator is then distended and the correctness of its position is ascertained by introducing the finger along side of it into the vagina. Pressure of one and one-half to two pounds is used. The temperature is gradually increased. The treatments are given in a series of ten each. These should be on consecutive days if possible. The temperature routine and the length of treatments are as follows:

| | <i>Temperature at start of treatment</i> | <i>Maximum temperature</i> | <i>Length of treatment</i> |
|---------------------------------|--|--------------------------------|--------------------------------|
| First Treatment | 106°-108° | 125°-126° | 30-40 min. |
| Second Treatment | 106°-108° | 127°-128° | 45 min. |
| Third and subsequent treatments | 108° | 128°-130° | 60 min. |

The treatments are given by and under the constant supervision of a trained physiotherapist.

In general hospitals, such as those of the Medical College of Virginia, the number of cases of pelvic infection is great. In 1936, 489 cases of pelvic infection were admitted to the Memorial and St. Philip hospitals and there were, as yet, an uncounted number of cases treated in the out-patient department. In the treatment of many of these cases, we have had the opportunity to observe the beneficial effects of Elliott therapy. Our observations lead us to believe that with the proper conservative treatment the great majority of pelvic inflammatory cases can be cured without operation and will thereby be spared the mutilating effects of the latter; that in other cases the use of this treatment will render operation less difficult and extensive; and, furthermore, that its use post-operatively will often shorten considerably the period of convalescence.

We are at present studying our cases analytically to give statistical support to the impressions gained from observing these cases. This study is not complete, but it has shown that in 1936, the first complete year in which we used Elliott therapy, there was a reduction of 21 per cent in the percentage of pelvic inflammatory cases operated upon. At the

Memorial Hospital alone the reduction was 26 per cent.

There are reports from all over the country which support these views. Holden, of Bellevue Hospital where 26,000 patients are admitted yearly to the gynecology wards and where 18,000 are seen in the out-patient department, has been using this method of treatment since 1929. He reports excellent results, and regards the method as being superior to any previously used method of conservative therapy. In some cases of cellulitis, expected to go to abscess formation, the exudate was absorbed; it was used in cases drained through the cul-de-sac; it was effective in cystitis; it was used without untoward results in desperately sick cases of acute salpingitis and pelvic peritonitis; gonorrhea of the cervix could always be cured by thirty daily treatments. Counsellor, of the Mayo Clinic, reports excellent results with this treatment and advises also its use post-operatively to shorten convalescence. Sovak uses Elliott therapy pre-operatively in cases of sterility. Doan and Simpson report nine out of ten cases as having been treated satisfactorily without recourse to surgery. They find the best results in cases of less than three months' duration. Moore reports three cases of puerperal infection, all treated successfully with marked analgesic effect and no hemorrhage. Mussey reports good results in pelvic inflammatory disease and also used it successfully in trichomona infections.

The method is not foolproof and should be carefully supervised. Cosgrove and Waters report four cases of injury to the vagina, resulting from the treatment. In two of these cases complete atresia developed. In a series of 10,000 treatments Holden had only one burn. This was due to negligence of a substitute nurse who allowed the temperature to go above 145°. Graham, in 600 cases, had a burn due to gross negligence in technique on the part of an interne. We have observed no accidents at the Medical College of Virginia.

Conclusion: Observations on the use of Elliott therapy lead to the conclusion that it is useful in all types of pelvic inflammatory disease; that it will render operation unnecessary in the majority of cases, and easier and less extensive in the rest; and that its use post-operatively will shorten convalescence.

I wish to acknowledge my indebtedness to Miss Loretta Phillips who gives these treatments, and to

express my appreciation of your invitation to speak to you tonight.

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STAB WOUNDS OF THE GALL-BLADDER WITH CASE REPORT

WILLIAM M. JUNKIN, M. D., F. A. C. S.,
Fredericksburg, Virginia

In reviewing the available literature on stab wounds of the gall-bladder the authors all speak of the rarity of this condition. Due to its rarity this is presented more as an interesting and unusual case than for its practical lesson.

The total number of cases to date has not, it seems, been published and is probably not known. Thole reported seventeen cases in 1912, with thirteen recoveries and four deaths. Kehr, in 1913, recorded finding records of seventeen cases with only

seven isolated injuries of the gall-bladder. Over a period of seventy years, with 325 abdominal stab wounds, Wiedmann reported two cases of gall-bladder injury but one was coincident with extensive injury to the transverse colon and pylorus.

Diagnosis of stab wound of the gall-bladder is of rather academic interest. The pressing question is whether or not to operate. However, delayed cases have been diagnosed on the basis of the location of the wound, jaundice, and ascites.

Treatment of gall-bladder wound varies from simple closure to extirpation. Closure may be done by purse-string or Lembert sutures, using fine chromic cat-gut, tanned gut, or silk. It is well to avoid sewing through the mucous layer if possible. The repair may be re-enforced with omentum or omental graft. The character and extent of injury and condition of the patient will suggest the most expedient method.

The case here reported involved slight liver damage but was essentially an isolated stab wound of the gall-bladder.

Case Record—Hosp. No. 9337.—At 5:15 P. M., November 8, 1934, a white girl, age twelve years, daughter of a lumberman, walked into the Elkins City Hospital, Elkins, W. Va., accompanied by her parents. She had received an abdominal wound at the hands of her eight-year-old brother about 7:30 A. M., ten hours before admission. Taking exception to her taunts the little boy had hurled a pair of shears at her from across the room. The shears were about seven inches in length and had been thrown a distance of approximately ten feet. The shears fell to the floor after striking her. There had been considerable bleeding. The patient thought the shears penetrated about one-half inch. Her mother thought the depth was nearer an inch. At 10:00 A. M., there had been brown vomitus streaked with blood. At 2:30 P. M., some milk was vomited which had been taken one and a half hours before. At time of admission she said she felt better and her only complaint was slight pain in the left lower abdomen. There was no evidence of shock. Temperature was 98.3 by axilla, pulse rate seventy-eight, and respiration twenty-four. The leukocyte count was 17,800. Chest examination was negative. The abdomen was level and soft but there was slight subjective tenderness in the left lower abdomen. The wound was one-fourth inch in diameter and situated in the right upper abdomen just below the costal border. It was probed but the probe could not be made to pass into the abdominal cavity.

The physical findings were mainly against serious internal injury. The history and elevated leukocyte count, however, had to be taken into account.

Immediate exploration was advised. This was accepted by the patient and family without protest.

The operative record is as follows: "Pre-operative diagnosis: Stab wound of the upper abdomen; Post-operative diagnosis: Stab wound of gall-bladder and liver. Operation: Enlarged the stab wound downward under local and traced through fascia but then lost. Began ether; opened peritoneum and bile-stained blood escaped. Packed. Ample upper right rectus incision. Fluid removed with suction; explored; closed rent in gall-bladder with one silk purse-string. Closed both wounds in usual manner in layers. One cigarette drain to gall-bladder region."

Gross Findings: About one pint fluid containing bile and blood. A small slit on upper surface of fundus of gall-bladder, from which bile was escaping. Small cut in border of the liver but no active bleeding. No evidence of injury to other viscera.

The post-operative course was rather quiet. Tetanus antitoxin U-1500 was given on the first post-operative day. Maximum t.p.r. was 100-110-36 and the minimum 80-98.3-24. The temperature was normal from the fourth day on. On the seventh post-operative day patient complained of pain in the right lower abdomen for several hours but examinations were essentially negative. The drain was removed on this day.

She left the hospital on the fourteenth day. She visited the hospital two years later and at that time was in excellent physical condition. A communication dated July 26, 1937, stated that she had not had any indigestion and that her health had remained good.

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804 Princess Anne Street.

A METHOD OF TRANSFUSION FOR INFANTS.*

PAUL HOGG, M. D.,
Newport News, Virginia.

Within the past fifteen years, transfusion has become a great part in the treatment of diseases of infancy and childhood. Since they are frequently used, the simplest and quickest method should be employed. The method, I believe, that is most suitable for the infant and premature baby is one in which citrated blood is given through a scalp vein or a vein on the dorsum of the hand. These veins are used because they are the most accessible ones in a baby of this age. The best scalp veins are usually found over the temporal region.

The technique of collecting the blood will not be described, for one is just as good as the other. The problem in pediatrics is giving the blood after it has been collected from the donor.

The method that I will describe is simplest, because:

1. Only one (never more than two) assistant is needed.
2. Few instruments are used.
3. It is almost never necessary to "cut down" on a vein, thereby saving the vein and eliminating the occasional infection that is sometimes encountered within the incision.
4. It is a quicker method.

What is actually needed to give citrated blood to an infant through a scalp vein or vein on the dorsum of the hand is a salvarsan flask, rubber tubing, a three-way stop cock, a ten c. c. syringe and a 22, 24 or 25 gauge needle one inch long. The size of the needle to be used depends upon the size of the vein. A needle with a short bevel is used, for there is less chance of getting out of the vein after it has been punctured.

The procedure is as follows: Select a vein. If it is a scalp vein, restrain the baby leaving only his head free. If the vein is covered with hair, shave a small area to insert the needle. Prepare this area with iodine and alcohol. Normal saline is poured into the salvarsan flask to fill the rubber tubing and to fill the syringe to the 3 c. c. mark. The citrated blood is now strained into the flask through two layers of gauze. The patient is placed in position with

his head toward the operator, and is held by both hands of the assistant. One hand is placed over the occipital region and the other over the face.

The next step is the most important of the whole procedure. The vein is distended by placing a finger over the distal portion and, with the assembled syringe, three-way stop cock and needle in the right hand, the skin is punctured about 1 cm. behind



Transfusion using a scalp vein. Baby six months old.
Transfusion using a vein on the dorsum of the hand.

the vein. Advance the needle toward the vein. In very superficial and large veins, the needle can be seen when it punctures the vein. Sometimes a definite give is felt just as in a spinal puncture. At times it can only be determined if the needle is in the vein by injecting some of the saline from the syringe. If the needle is not in the vein, a lump appears under the skin. In that case withdraw the needle and start about 1 cm. further down. It is impossible to withdraw blood into the syringe from such a small

*From the Babies Hospital, Wilmington, N. C.

vein. After the vein has been punctured, the needle is threaded to the hilt. Since a blunt pointed needle is being used and the vein distended, there is little chance of going through the vein while threading the needle.

Turn the key of the three-way stop cock toward the rubber tubing and fill the syringe with blood. Then, after turning the key toward the needle, slowly inject the blood into the patient's vein. The patient may move his head a little but the needle will stay in the vein.

In children over two or three years of age where there are large veins on the medial aspect of the ankle, the cubital fossa and external jugular veins, this same apparatus may be used. A piece of rubber tubing about four inches long with an adaptor is attached to the stop cock and in turn fitted to the needle after the vein has been punctured. The most suitable needle to use here is a 20 or 22 gauge about three-fourths inch long. The rubber tubing between the needle and stop cock is used to allow for motion that may be produced by the patient. It

is never necessary to fasten the part to a padded board.

During the past fourteen months I have given 191 transfusions, using this method. 152 of these patients were infants, two years of age and under. Of the 152 I had to "cut down" or incise the skin to puncture the vein in only 2 cases. The remaining 39 patients were from two to eleven years. In this group it was not necessary to "cut down" to puncture the vein.

Advantages of this method are:

1. This method is very adaptable to small infants and premature babies.
2. The same vein can be used several times if it is compressed after being used.
3. The same apparatus can be used to give fluids, intravenously, to small dehydrated babies.
4. The apparatus is not expensive.
5. Numerous instruments, several assistants and the trouble of "cutting down" is done away with.
6. This method can be used in any pediatricist's office.

31st Street and West Avenue.

THE DOCTORS' PARTICIPATION IN THE HEALTH PROGRAM.*

V. L. ELLICOTT, M. D., DR. P. H.,
Health Officer, Montgomery County, Maryland,
Rockville, Maryland.

Present-day health departments engage in many medical services and are thus brought into close contact with the private practice of medicine. Much planning is necessary, not only to avoid encroachments but to find ways for the doctors and health departments to help each other.

In Montgomery County the physicians have been keenly interested in the health program and have given earnest cooperation in building up our present plan of doctor—health department relationships. Our plan is described in order to show how the practitioner has been made a partner in it rather than pushed aside.

When a health matter which is likely to affect private practice is proposed or is to be changed, it is our custom to refer the matter to the Health Com-

mittee of our County Medical Society. This committee consists of the officers, one other member of the Society, and the County Health Officer. This small group holds an informal meeting, usually at the close of one of the weekly luncheons of the Rockville Rotary Club. Some of the committee are Rotary members, others come as invited guests. A preliminary plan is made which is held for presentation at the next quarterly meeting of the County Society. Sometimes it is purposely talked over in the interim by doctors known to be especially interested. These preliminaries are aimed to make the subject more easily disposed of at the Society's meeting and avoid taking too much time from the scientific program.

Two years ago the Health Officer asked that provision be made for medical examination of school children. His own time was no longer available

*Read before the Medical Society of Virginia, Maryland, and District of Columbia in Leesburg, Va., May 19, 1937.

because of the pressure of other work. After the usual preliminaries the Medical Society made a recommendation that this work be divided among practitioners of the county. The Society's health committee was to draw up a list of doctors and work out other details.

The plan was adopted, and it has worked very well. Each of the health department nurses (then five) has been assigned a doctor to work with on one morning per week in the schools in her district. A fee of five dollars is provided by the County Commissioners as a modest remuneration for each half day of physician's work. The nurse makes schedules and all preliminary arrangements, brings examining equipment and tells her doctor where to meet each week. At the suggestion of the Medical Society, each physician is assigned to a territory *outside* the limits of his regular practice (except in one rural area in which all the practice is in the hands of one physician and his son). This was considered especially important in examining younger children because the parents are invited to be present at the examinations. It was feared that the influence of the examiner might lead to misunderstandings between local practitioners.

This plan covers the examination of 4,000 children per year. The kindergarten and new first grade children are done routinely; also the seventh grade of the junior high school. High school children engaging in strenuous athletics and a few children in the upper elementary grades who appear to the teachers to be below par are also included. Children found with physical defects are referred to their own physicians and dentists for corrective work. Teachers, nurses and lay health committees use their influence in getting parents interested in corrections.

Last Fall the plan was slightly modified. A separate list of physicians was drawn up by the health committee of the Medical Society for the high school examinations, women physicians being provided for girls and men for the boys. These were likewise assigned to schools outside their practicing areas. They worked with the assistance of the athletic directors instead of nurses.

Other health department clinic work is conducted along similar plans. Infant and pre-school child health conferences are held once a year in thirty localities and the work divided among eight practicing

physicians. A maternity clinic is held for prenatal and postnatal examinations. This draws two more physicians into the health program. The county's three venereal disease clinics are each operated by local practitioners. The only exceptions to the use of local men are the chest clinics in which a sanatorium man from Glen Dale is employed and the orthopedic clinic in which a Baltimore orthopedist serves. Altogether approximately sixteen local men are now engaged in some form of health clinic. This is about one-third of the doctors actively practicing in the county. All receive the same fee of five dollars for either a morning, afternoon or evening session—a very modest amount, since it includes transportation.

There is an understanding between the health department and the physicians that clinics will not accept patients unless they are unable to pay for private medical service or unless they are referred to the clinic by their own doctors. The only exception to this is the infectious syphilis patient, a case which is considered so great a public menace that he is treated without questioning.

In the suburban area of our county we are now holding a few summer round-up conferences on a new plan. By the Summer round-up is meant an examination in the Spring of children who will enter school for the first time the following Fall. To avoid conflict between those who can pay and those who cannot, we conduct a registration conference for the well-to-do children and a doctor's conference, or clinic, for the others. At the registration conference, no doctor is present. The children are weighed and measured, tested for vision, recorded on examination blanks and asked to go to their doctors for physical examination, toxoid and vaccination.

In one community we have arranged child health conferences in which local doctors serve as clinicians. To each conference are invited the children in the practice of the doctor serving as clinician. This avoids somewhat the distinction between the pay and non-pay children. The consensus among the physicians, however, is that the only satisfactory kind of clinic is the free one and that this should be restricted to the low income classes.

Our county has many things which draw the doctors and the health department together. Most important of these is our laboratory, which ap-

proaches the ideal. It is centrally located, offers a diversified diagnostic service, and dispenses a variety of biologicals, including arsphenamine, whooping cough vaccine, placental extract and pneumonia serum as well as the more commonly used materials. The health office is next to the laboratory and therefore also convenient for doctors to drop in and make inquiries.

The doctors and the health department are in frequent contact. The Health Officer calls routinely after a new case of tuberculosis has been reported and when there is a question regarding quarantine. Form letters are mailed to doctors frequently and it is rumored that they are sometimes read. The Health Officer has begun a series of visits to doctors in their offices. This informal way of talking things over results in very helpful suggestions both ways. Usually there is so much of common interest that the visit is hard to end.

Through the Montgomery County plan there has been a large increase in preventive medical work. In the last three years the number of diagnostic specimens submitted to the laboratory has almost doubled. Nearly 4,000 were submitted in 1936. Last Summer I noted which doctors had had communications with the health office or laboratory and found that during a six months' period almost every one in the county had either reported a case, sent in a specimen or withdrawn a biological. I believe this shows that when official health services are set up and physicians are drawn into clinic work, the practice of preventive medicine also grows in other ways.

The salient points of the Montgomery County plan are as follows:

1. The Medical Society, and especially its health committee, has played a major part in planning doctor — health department relationships.
2. Health department clinic work has not encroached on private practice because clinics have been limited to low income families.
3. Almost all of the clinic work has been done by practitioners of the county, selected by the Medical Society, given assignments outside their practicing area, and remunerated out of public funds.
4. Records show a marked increase in the preventive medical practice of the doctors.

Correspondence

Sigerist—Socialized Medicine in the Soviet Union.

Richmond, Virginia
December 8, 1937.

TO THE EDITOR:

Of course you have seen the adverse editorial criticism of Sigerist's book on Socialized Medicine in the Soviet Union in the *Journal of the American Medical Association*.

I suppose that controversy is not particularly valuable but the editorial is so obviously biased and misleading that it perhaps should be answered. Sigerist states in his introduction that his purpose is to describe socialized medicine as it is beginning to take shape in the Soviet Union. He recognized that it is just beginning, that it is working under difficulties, and that in many respects it is crude and incomplete, but it has a purpose and an objective toward which it is moving.

The A. M. A. administration may not be able to fool all of the doctors all of the time but, apparently, it can greatly delay the coming of more adequate care of all of the people in these United States. What it more, by its refusal to exercise leadership and guidance in this matter it may participate political control of a situation which obviously should remain in the hands of the physicians themselves.

E. C. L. MILLER, M. D.

Public Health Statistics

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia.

The report of the State Health Department's bureau of communicable diseases, as compiled for the month of November, shows the following cases compared with the same month in 1936.

| | 1937 | 1936 |
|-----------------------------------|------|------|
| Typhoid and Paratyphoid..... | 22 | 44 |
| Diphtheria | 188 | 265 |
| Scarlet Fever | 164 | 233 |
| Measles | 225 | 96 |
| Meningitis | 17 | 20 |
| Poliomyelitis | 3 | 9 |
| Rocky Mountain Spotted Fever..... | 0 | 0 |
| Typhus Fever | 3 | 0 |
| Undulant Fever | 2 | 0 |
| Tularemia | 3 | 7 |
| Smallpox | 0 | 0 |

NEW REPORTING FORMS FOR SYPHILIS AND GONORRHEA

A new form to be used by the physicians for reporting syphilis and gonorrhea in counties having full-time health officers has been prepared by the Department. After January 1, 1938, this form will be used for reporting venereal diseases instead of including them on the regular weekly morbidity report card.

The new system does not require the name of the patient. A case number has been placed on each form for the purpose of identification if it should become necessary.

This new system represents more than a case report, as it offers two valuable services to the physician. It affords an opportunity to furnish the identification of contacts that may reasonably be suspected of having been exposed to infection, and to report cases that have lapsed from treatment.

It is urged, therefore, that the physician consider the benefits that may be derived from this system of reporting and adopt it in his practice as his contribution to the program of venereal disease control in Virginia.

DARKFIELD FACILITIES

The delayed darkfield service offered to the profession in April, 1937, met a popular demand and has been used extensively. The procedure has proved to be reliable and physicians are urged to take advantage of this method of diagnosing early syphilis.

INDUSTRIAL HYGIENE AND SILICOSIS

In a recent survey the Bureau of Industrial Hygiene determined the number of workers exposed to specific materials and their by-products in approximately one-third of the industries of Virginia. From this data an estimate was made of the number of persons in the entire State exposed to the materials indicated.

These figures indicate that approximately the following number of industrial workers are exposed to the various dusts: organic dust, 57,200; silicate dust, 40,800; silica dust, 16,300; non-silicious dust, 9,500; asbestos dust, 350; coal dust (bituminous), 24,100; coal dust (anthracite), 500.

With reference to silicosis, approximately 16,000 industrial workers reasonably can be expected to be exposed to silica to some degree. However, a detailed survey of the industries involved will be re-

quired to determine whether or not the exposures are sufficient to result in silicosis.

In addition, it is estimated that nearly 14,000 workers are exposed to silicate dust. While not all of the silicate dusts are known to cause or even be suspected of causing lung involvement similar to silicosis, some silicate dusts like talc and asbestos are known to be harmful.

The Department is continuing to study this problem and at a later date will publish a detailed report of its findings.

VIRGINIA REGIONAL WATERWORKS SCHOOLS

A waterworks school, co-sponsored by the State Department of Health, recently was held at the Virginia Polytechnic Institute, Blacksburg.

While conferences have been conducted in the past, this school was the first in which regular classes were attempted with the enrollees divided into groups according to their previous training and experience and to the type of supply operated by them. An additional departure was the correspondence courses made available to those attending the sessions. Any superintendent or operator, who satisfactorily completes the particular course in which he is enrolled, will be awarded a certificate of merit by the sponsoring agencies.

The instruction was sponsored by the League of Virginia Municipalities, the Virginia Section of the American Waterworks Association, the State Division of Trade and Industrial Education and the State Department of Health.

Members of the Department's engineering staff actively participated in the instruction program.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. JAMES B. STONE, 15 Maxwell Road, Richmond.

President-Elect—MRS. HAWES CAMPBELL, Venter.

Corresponding Secretary—MRS. LAWRENCE O. SNEAD, 5307 New Kent Road, Richmond.

Recording Secretary—MRS. JAMES K. HALL, 3011 Seminary Avenue, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, 2502 Hawthorne Avenue, Richmond.

Chairman of Publicity—MRS. FRED J. WAMPLER, 4103 Forest Hill Avenue, Richmond.

Woman's Auxiliary to Southern Medical Association.

The Southern Medical Auxiliary met in New Orleans, December 1, at 10:00 A. M., with Mrs. Frank Haggard, president, presiding. The address of welcome was given by Mrs. George J. Toquino. She very interestingly used the letters in the words "New Orleans" to give a very vivid description of the city.

The address given by Mrs. Augustus Kech, president of the American Medical Auxiliary, told us about the wonderful work they were doing in Pennsylvania.

There were very few state reports read, as the time was limited.

We were then invited to attend a luncheon and a walking tour in the old French section of New Orleans, which was enjoyed by everyone.

On December 2, the business session followed a lovely luncheon in the Blue Room at the Roosevelt Hotel. The president presided and Mrs. W. K. West was toastmistress. A quartet from Tulane University sang several songs.

As guest speaker, Dr. Frank Boland from Atlanta told how Dr. Crawford W. Long hit upon the idea of using ether in operations.

Dr. Seale Harris, member of the advisory committee, urged the Auxiliary to start a memorial to three negro women slaves who underwent more than twelve operations each in the cause of medicine. The operations were performed by Dr. Marion Sims.

Mrs. Augustus Kech, president of the American Medical Auxiliary, said that the doctor's wife is the most important person in the community and urged the delegates to present a "Solid South" in health education, and to march in harmony with other organizations, especially the P. T. A.

The new officers were installed. We were taken on a delightful automobile tour of the city that afternoon, and the next morning we had the pleasure of a lovely boat trip around the harbor.

MARION EDMUNDS,
(MRS. MEADE EDMUNDS),
Petersburg, Va.

The James City-New Kent Medical Auxiliary

Met at the home of Mrs. J. B. Porterfield at Newport News on November 29. Six members were present and a new member, Mrs. F. R. Person, was received. The business of the meeting included the election of two new officers—Mrs. J. B. Porterfield,

program chairman, and Mrs. F. R. Person, secretary. The other officers retained their posts for the ensuing year. A social hour was enjoyed at the conclusion of the business session.

The Petersburg Auxiliary

Held its regular fall organization meeting on November 23, at the Chaya Tea Room, Petersburg, Va., at this time honoring our state president, Mrs. James B. Stone, with a luncheon. Mrs. Hawes Campbell, state president-elect, was also a guest at this meeting.

Mrs. Stone, the speaker for the day, gave a most interesting and inspiring message regarding our Auxiliary work, and was warmly received by this, the first Auxiliary she had visited since taking office in October.

Mrs. Campbell also responded to her introduction as a guest and state officer, bringing greetings from the Mid-Tidewater Auxiliary, and urging cooperation along all lines in all state Auxiliary projects, but especially in health programs or clinics.

Seventeen members were present, and Mrs. Fletcher J. Wright, the newly-elected local president, presided, introducing the following new officers and chairmen of local committees: president-elect, Mrs. Allen Barker; vice president, Mrs. J. A. Pilout; recording secretary, Mrs. Meade Edmunds; treasurer, Mrs. H. M. Snead; corresponding secretary, Mrs. Philip Jacobson; historian and exhibit chairman, Mrs. George Reese; *Hygeia* chairman, Mrs. C. W. Lynn; publicity chairman, Mrs. Fletcher J. Wright, Jr.; public relations chairman, Mrs. Munford Yates; and program chairman, Mrs. Herbert Jones.

At the short business meeting following the luncheon, it was decided to donate to the State T. B. Bed Fund \$36.50; for State Maintenance Fund \$10.00; for local Y. M. C. A. membership for underprivileged boy \$5.00.

A.M.A. Radio Programs for January.

CONTAGIOUS DISEASES

January 5—Sneezes and Sniffles

Cause, spread, prevention of colds, pneumonia and influenza; importance of early medical care.

January 12—Scarlet Fever, Measles, Whooping Cough

Modern attitudes toward these diseases; their prevention by community cooperation.

January 19—Smallpox and Diphtheria

Unnecessary diseases; preventable by immunization of infants.

January 26—Poliomyelitis

Information about the disease; cooperation with President's Birthday Ball.

These programs come over NBC Red Network, on dates given, at 2:00 P. M. Eastern Standard Time.

Truth About Medicine

In addition to the articles previously enumerated, the following have been accepted by the Council on Pharmacy and Chemistry to the American Medical Association.

Gilliland Laboratories, Inc: Gas Gangrene Antitoxin, Concentrated and Refined; Tetanus-Gas Gangrene Antitoxin, Concentrated and Refined; Antimeniugococcic Serum, Concentrated and Refined; Rabies Vaccine (Modified Semple Method).

Lederle Laboratories.

Aminophyllin-Lederle.

Ampuls Solution Aminophyllin-Lederle, 0.24 Gm., 10 cc.

Ampuls Solution Aminophyllin-Lederle, 0.48 Gm., 2 cc.

Tablets Aminophyllin-Lederle, 0.1 Gm., (1½ grains).

E. R. Squibb & Sons.

Tablets Sulfanilamide-Squibb, 7½ grains.

New and Nonofficial Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Cevitamic Acid-Lederle.—A brand of cevitamic acid-N. N. R. (New and Nonofficial Remedies, 1937, p. 456), obtained from the fermentation of certain sugars. It is supplied in the form of tablets 0.01 Gm. and 0.05 Gm. Lederle Laboratories, Inc., Pearl River, N. Y.

Elixir Ipral Sodium.—Contains ipral sodium (New and Nonofficial Remedies, 1937, p. 106) 13.17 Gm. in 1,000 cc. in a menstrum composed of alcohol 22 per cent, glycerin, saccharin and water, flavored with a mixture of pineapple concentrate, orange syrup, fluidextract of kola, fluidextract of cascara, and tincture of cardamon compound. One teaspoonful (5 cc.) is equivalent to 1 grain of ipral sodium. E. R. Squibb & Sons, New York.

Sulfanilamide-P. D. & Co.—A brand of sulfanilamide-N. N. R. (The Journal A. M. A., July 31, 1937, p. 358). It is marked in the form of tablets, 5 grains. Parke, Davis & Co., Detroit. (J. A. M. A., November 6, 1937, p. 1543).

Propaganda for Reform.

Sulfanilamide—A Warning.—Seldom has any new drug introduced in medical practice aroused the enthusiasm that has developed for sulfanilamide. The Journal, the Council on Pharmacy and Chemistry and various individual practitioners have warned against indiscriminate use of sulfanilamide. In the Journal A. M. A., September 25, eleven contributions on sulfanilamide were published. Nine of these reported the occurrence of toxic manifestations, including dermatitis and photosensitization of the skin. Particularly serious are the possible dangers of granulocytopenia and sulf-hemoglobinemia. The latter may sometimes go unrecognized without adequate methods of diagnosis. Sulfanilamide should not be administered in association with other drugs until definite information is available as to toxic effects. Thus far only the harmlessness of sodium bicarbonate in such association seems to have been established. Magnesium sulfate and some of the coal tar derivatives are conspicuously drugs which should not be administered concurrently. (*J. A. M. A.*, October 2, 1937, p. 1128.)

Cobra Venom in Arthritis.—For a number of years various venoms, especially those of bees and snakes, have been used in the treatment of a variety of diseases. Of commercial preparations of different venoms, those of bees have been most widely used. No extensive scientific study has been made concerning the value of cobra (or bee) toxins in chronic arthritis. Many believe that such relief as arthritis patients may obtain from bee or snake venoms is probably derived from a reaction somewhat similar to that from foreign proteins (milk, typhoid vaccine). The value of snake venom as a superior coagulant is more definitely established. (*J. A. M. A.*, October 2, 1937, p. 1143.)

Vaccines in Colds.—All investigations to date have consistently shown a wide variety of bacteria present in colds. This fact necessitates the assumption either that colds are not due to any specific organism but that symptoms which we recognize by that term can be produced by a large number of different bacteria, or that the specific cause has not yet been identified. It is evident, therefore, that any attempt made now to produce immunity by vaccines must be aimed at a combination of organisms, with the hope of chance inclusion of the right one, or that the combination also by accident contains the as yet unidentified principle which causes all colds. Neither of these possibilities seems to offer a scientifically rational approach to prophylaxis. The duration of acquired immunity is another important question. There is no real scientific evidence supporting the use of vaccines for the common cold. In those individual instances in which benefit seems to result, this apparent effect may be due either to the individual fluctuation in frequency which is generally observed or to some nonspecific stimulation of immunity created by the administered proteins. (*J. A. M. A.*, October 9, 1937, p. 1217.)

Book Announcements

Clinical Urinalysis and Its Interpretation. By ROBERT A. KILDUFFE, A. M., M. D., F. A. S. C. P., Director of Laboratories, Atlantic City Hospital; Pathologist, Atlantic County Hospital for Tuberculous Diseases; Serologist, Atlantic County Hospital for Mental Diseases; etc. Philadelphia. F. A. Davis Company. 1937. Octavo of vii-428 pages. Forty illustrations. Cloth. Price, \$4.00.

A complete book of four hundred odd pages devoted entirely to the subject of urinalysis with especial reference to methods applicable for the various routine examinations.

Although the author in his preface writes that "the primary purpose of this book is to present in a relatively concise form the subject of urinalysis from the standpoint of the physician with particular reference to procedures feasible in the office laboratory," this book seems to be a far cry from this determination. The volume is essentially a manual of laboratory procedures covering all phases of urinalyses, and would seem to appeal only to a very few of the larger laboratories as an occasional reference book, if indeed it were required at all. Any modern book of clinical pathology, devoting less space to urinalysis and covering other laboratory procedures, would be far more practical for the physician.

The teaching clinical pathologist may find Dr. Kilduffe's book of value to him in the preparation of his lectures on urinalysis.

J. H. SCHERER, M. D.

The Traffic in Health. By CHARLES SOLOMON, M. D., Assistant Clinical Professor of Medicine, Long Island College of Medicine; Lecturer in Materia Medica, Training School for Nurses, Jewish Hospital of Brooklyn. Navarre Publishing Company, Inc. New York. 1937. Octavo of xii-393 pages. Cloth. Price, \$2.75.

There have been a flood of such books on frauds during the last few years, but this is the first one written by a medical man. The enumerable products about which Dr. Solomon writes have most all been exposed to the public before, but the author, in this instance, does it more professionally without making the reading tiresome. Dr. Steenbock will not like to see his name spelled as it is! There are few mistakes, however, of this kind.

Many of the products discussed are old-time ones and some of the "fly-by-nights." His exposures are not as "ferocious" as those of Consumer's Research and books put out directly and indirectly by this private agency, and therefore may be more success-

ful in curbing some of the frauds now forced by high pressure advertising onto the gullible public. Dr. Solomon's simple medical explanations here and there are excellent and well written for reading by laymen.

The book is well worth consideration by anyone who doesn't already know the food, drugs and cosmetic "rackets" and the difficulties encountered in changing the 1906 Wiley law.

SIDNEY S. NEGUS, PH. D.

Library Service For Our Readers.

Recent acquisitions to the Library of the Medical College of Virginia, available to our readers, are given below. The only cost is return postage.

- Abramson, H. A.—Electrokinetic phenomena and their application to biology and medicine.
- Alexander, J.—Colloid chemistry.
- American Medical Association. *Medicolegal cases*.—Abstracts of court decisions.
- Barclay, A. E.—The digestive tract.
- Bingham & Moore.—How to interview.
- Bivin & Klinger.—Pseudocyesis.
- Boer, J. H. de.—Electron emission and absorption phenomena.
- Bradbury, S.—The cost of adequate medical care.
- Bromberg, W.—The mind of man: the story of man's conquest of mental illness.
- Buckley, C. W.—Reports on chronic rheumatic diseases.
- Bullowa, J. G. M.—The management of the pneumonias.
- Carlson & Johnson.—Machinery of the body.
- Cheatie & Cutler.—Tumors of the breast.
- Clark, C. H. D.—The electronic structure and properties of matter.
- Collins & Kalnay.—A handbook of seasickness.
- Cumberbatch, E. P.—Diathermy (including diathermotherapy).
- Cunningham, B. V.—Family behavior.
- Diehl, H. S.—Healthful living.
- Flexner, J. T.—Doctors on horseback.
- Goodsell, W.—A history of marriage and the family.
- Hartridge & Haynes.—Histology.
- Holmes, H. N.—Out of the test tube.
- Hughes & DuBridge.—Photoelectric phenomena.
- Hugon, P. D.—The modern word-finder.
- Kistiakowsky, G. B.—Photochemical processes.
- Kleitman, N. *et als*.—Sleep characteristics.
- Knyveton, J.—The diary of a surgeon in the year 1751-1752.
- Koll, I. S.—Medical urology.
- Kracke & Garver.—Diseases of the blood, and atlas of hematology.
- Kraus, C. A.—Properties of electrically conducting systems.

Virginia Medical Monthly

Founded by LONDON B. EDWARDS, M. D., April, 1874
 Owned by MEDICAL SOCIETY OF VIRGINIA since November, 1919
 WYNDHAM B. BLANTON, M. D., *Editor*
 AGNES V. EDWARDS, Richmond, *Business Manager*

PUBLICATION COMMITTEE

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All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Monthly, 1200 East Clay Street, Richmond, Va.

This journal is not responsible for the opinions and statements of its contributors.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Subscription Price: \$2.00 per annum in advance. Single Copies 25c.

VOLUME 65

JANUARY, 1938

No. 1

Editorial

An Old Mediaeval Custom.

Among the strange phenomena which characterized the hospitals of the Middle Ages was the custom of placing one or more sick persons in the same bed. We knew that in some foreign countries this custom was still in existence, but we admit to some surprise on discovering that in a large municipal hospital in one of our metropolitan centers it may still be observed. We have it on good testimony that 3,000 patients are comfortably accommodated by this hospital in 2,000 beds. We understand that the authorities are at pains to separate the sexes, that the color line is sharply drawn and that contagious diseases are excluded from the double bed service.

Lest we condemn too hastily this survival of a past age, the hospital would no doubt remind us of the economies thus effected—in bed space and bed linen for example, and of the favorable influence upon the nostalgia that sometimes afflicts hospital patients. It would also be amiss to forget that many subjects of hospital bundling have known no other method of recumbent accommodation. For many of them it is simply improving home situations in which three or more were accustomed to lay themselves down to sleep together, for the unusual good fortune of one bed companion. Until the domestic use of double beds among the enlightened and economically favored stratum of society goes out entirely, we may disapprove, but not too severely criticize, the custom of plural bed accommodations for hospital patients.

A Twelve Million Dollar Hospital.

New Orleans is a city of 500,000 inhabitants. Richmond is a city of almost half that size. The Charity Hospital in New Orleans is a state hospital caring for patients not only in New Orleans but those from all over the state. The Hospital Division of the Medical College of Virginia in Richmond receives state funds and in turn cares for its quota of state patients. In New Orleans today a twelve million dollar hospital is in process of erection designed to replace the old Charity Hospital. It is financed by a four million dollar legislative grant, by private benefactions, but most important of all, by the great national Santa Claus—the Federal Government.

In Richmond there is a crying need for a new and larger general hospital, a need that has been recognized and talked about for years; but one and a half million dollars is all that we can see, and we go about wondering where that much is coming from, each of us hoping the other fellow will get it for us, doubting ourselves and doing very little. Had the people of Richmond and Virginia thought about hospitals as constructively as the people of New Orleans and Louisiana have thought of them, we also would be constructing a hospital—a six million dollar hospital.

Hopkins flourishes to the North. Duke expands to the South. In the far South a progressive state takes time by the forelock and catches Uncle Sam while he is in the giving mood. Richmond is fast

losing the proud appellation she once boasted as "the medical center of the South." Nothing short of a tremendous effort and that right early will salvage a medical glory that was once hers. The combined efforts of citizen and citizeness, of the legislative and medical forces of the whole state, are needed to hold for the capital of Virginia the medical preeminence that logically belongs there.

The Rubicon Crossed.

An important article in this issue of the MONTHLY calls attention to a critical situation in the national capital. It discloses Uncle Sam in the role of doctor—physician to the employees of HOLC. It is apparently a bang-up, authentic case of socialized medicine, initiated, planned, financed and fostered by the United States government. It is only one sector on a wide front, but that sector has been completely occupied. Other advances will no doubt follow, and when, as our article points out, the mop-up squads have completed their job, private practice in Washington will be about as possible as in Leningrad.

Can organized medicine do anything to stop the forces that seem intent on socializing American medicine? It seems to us they can. The medical profession in Canada recently told the Canadian government when to halt in its scheme of health insurance and it enforced its will by refusing to serve in any part of the government's scheme. Their method can paralyze any government which tries to foist on an unwilling profession a misconceived and ruinous plan of action. If the hospitals of Washington will refuse patients under this government plan, if they will drop from their staffs those in the employ of the government, if the American Medical Association and the District of Columbia Medical Society will drop from membership doctors who participate in the plan, if the whole medical profession will stand together to offer the passive resistance of non-cooperation in all such plans which do not bear the stamp of approval of organized medicine, there is little danger of American medicine becoming socialized. As long as we are divided, call each other names and act as great individualists, the chances of resisting the threats of socialized medicine in this country are slight.

The Legal Power of Medical Societies.

A decision handed down within recent months by the highest court of one of the states of the

Pacific Coast has interesting bearing upon the power of organized medicine to control the action of individual doctors. Just as the labor unions have been able to hold their members to action in conformity with the policy of the union so organized medicine appears to have within its grasp disciplinary and restrictive powers. The Court said, "The constitution, charter and by-laws of the medical society constitute a contract between the members of the society which the courts will enforce if not immoral or contrary to public policy or the law of the land. . . . The medical society, in the enforcement of its by-laws for the direct purpose of benefit to itself and to its members is not answerable for damages incidentally resulting to a third person. So long as one remains a member of the medical society, such a member can be compelled under his contract with the society to obey the laws, rules and regulations of the society or suffer the penalty of fine, suspension or expulsion. . . . The weight of authority is to the effect that in pursuing its legitimate objects an association has the right to coerce a member by fine, suspension or expulsion. . . ."

Medical Examinations Before Marriage.

At a recent conference of social hygiene executives in New York many measures were discussed as having bearing upon the fight against venereal diseases in this country. None appears to us more important than that of legislation designed to require examination of prospective brides and bridegrooms before marriage. Such legislation is now effective in eleven states and in thirteen others some sort of premarital examination is compulsory. The forces of reform need to tackle this matter more definitely in Virginia. The Medical Society of Virginia should take the lead in framing such legislation. This is the type of leadership the public has a right to expect from the profession.

Another Pneumonia Cure.

Clyde Brooks is the Professor of Pharmacology and Experimental Therapy in the Louisiana State University School of Medicine. Deuteroproteose is a protein split product derived from ox fibrin by digestion with pepsin and hydrochloric acid. At the meeting of the Southern Medical Association in New Orleans, Clyde Brooks claimed that deuteroproteose parenterally administered cures pneumonia.

It is not the first time claims have been made for non-specific protein therapy. In fact ever since

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Ichikawa in 1914 reported favorably on the intravenous use of *B. typhosus* in typhoid fever, a host of different preparations have been tried and many diseases, especially acute and chronic infections with demonstrable localizations, have been subjected to this form of therapy. Deuteroproteose is said to arouse the forces for immunity without the shock or chill-producing phenomenon. It is an immunizing body of low toxicity.

In a large series of cases (1200), Brooks claims to have reduced his pneumonia mortality in a striking way by the use of deuteroproteose—his mortality in lobar pneumonia was 10 per cent, in bronchopneumonia 9 per cent. In fact his figures even in Type I pneumonia are as good as with serum. The astonishing thing about his claims is that his product is said to be useful in all bacterial types of pneumonia, in both bronchial and lobar pneumonia, in late as well as early cases, in the old as well as the young.

One is reminded of an equally astonishing report published a number of years ago by Lambert in the treatment of pneumonia by vaccine on the wards of Bellevue Hospital. We know of no confirmation of Lambert's results. We wonder if anyone else will be able to make deuteroproteose do what Dr. Brooks has reported.

P. P. D.

Elsewhere in this issue of the VIRGINIA MEDICAL MONTHLY we have folded in a rather important communication from the National Tuberculosis Association regarding P. P. D. This preparation appears to have certain advantages over the old tuberculin in the diagnosis of tuberculosis and it deserves to have more wide-spread use among physicians. The advantages of the product as well as the technique of its use are clearly set forth in the communication from the National Tuberculosis Association.

Proceedings of Societies

The Danville-Pittsylvania Academy of Medicine,

At its meeting in November, re-elected Dr. P. W. Miles as president and elected Drs. L. O. Crumpler and E. E. Barksdale as vice-president. All are of Danville. Dr. I. C. Harrison was named as chairman of arrangements for the meeting of the Medical Society of Virginia in Danville in the Fall of 1938.

Fredericksburg Medical Society.

At its annual meeting early in December, this Society elected Dr. Thomas W. Dew as president, succeeding Dr. John E. Cole, and Dr. J. M. Holloway as vice-president. Dr. Thomas B. Payne was re-elected secretary-treasurer. All officers are of Fredericksburg.

The Lynchburg Academy of Medicine

Held its regular meeting on December 6, with the President, Dr. J. W. Davis, Sr., presiding. At the business session, the following officers were elected for 1938: Dr. Elisha Barksdale, President; Dr. S. E. Oglesby, vice-president; Dr. J. W. Devine and Dr. James Gorman on Board of Trustees for two years; Dr. R. D. Caldwell and Dr. S. O. Handy on the Board of Trustees for one year. The secretary is

named by the Board of Trustees at their January meeting. Dr. William V. Rucker of Bedford, Va., was elected to membership in the Academy.

Dr. Barnes Woodhall, Neurosurgeon from Duke University Hospital, presented an extremely interesting and instructive paper on "Acute Head Injuries."

The Richmond Academy of Medicine

Held its annual meeting on December 14, at which time Dr. M. Pierce Rucker presided and reports were presented from its various committees. The report of the Nominating Committee was unanimously adopted as follows: President, Dr. Austin I. Dodson; vice-presidents, Drs. Charles M. Caravati and Ennion S. Williams; and recording secretary, Dr. R. A. Nichols, Jr. Mrs. John L. Burke was re-appointed by the board of trustees as executive secretary-treasurer. The new board of trustees will be composed of Drs. R. W. Miller, M. P. Rucker, Karl S. Blackwell, Dodson and Caravati.

Following the business meeting, the members adjourned to the dining room and enjoyed a Christmas supper.

The Roanoke Academy of Medicine

Has been holding its usual interesting monthly meeting during the Fall, under the presidency of Dr. H. H. Wescott, with Dr. C. T. Burton as secretary. Dr. Fred Hamlin, the retiring president, presided at the October meeting.

Drs. Wescott and C. H. Peterson presented papers at the October meeting, and Drs. C. A. Young and Churchill Robertson of Roanoke and Dr. L. R. Broome of Catawba Sanatorium at the November meeting. In December, Drs. S. Beverly Cary, Linwood D. Keyser and L. C. Spengler were the essayists.

The following have been admitted to membership during the Fall: Drs. L. C. Spengler and H. B. Stone, Jr., of Roanoke, Dr. John O. Hurt of Bent Mountain, and Dr. L. A. Micou of Eagle Rock.

The Southside Virginia Medical Association

Held its regular quarterly meeting in Petersburg on the afternoon of December 14, with Dr. G. M. Naff of Emporia, presiding. Following a case report

by Dr. H. M. Snead of Petersburg, interesting papers were presented by Drs. J. Morrison Hutcheson, Thomas W. Murrell, and R. Angus Nichols, Jr., of Richmond, and Drs. James W. Hunter and George A. Duncan of Norfolk.

At the business session, the following officers were elected for the ensuing year: President, Dr. W. J. Ozlin of South Hill; vice-presidents, Drs. Leta White of Petersburg, James A. Grizzard of Drewryville, John A. Proffitt of Burkeville, and J. Lewis Rawls of Suffolk; secretary-treasurer, Dr. R. L. Raiford (re-elected) of Franklin. The executive committee for the following year will be composed of Drs. W. D. Kendig of Victoria, J. E. Rawls of Suffolk, and C. S. Dodd of Petersburg. The membership of the nominating committee includes Drs. M. H. Todd of Norfolk, T. F. Jarratt of Jarratt, and F. N. Mallory of Lawrenceville.

After a delightful dinner as guests of the Petersburg Medical Faculty, the Association adjourned to meet at Franklin on the second Tuesday in March, 1938.

News Notes

Happy New Year
to
All Our Readers!

Monthly Changes Date For Beginning Its Volume.

As a matter of convenience for binding and for reference in libraries, it has been suggested that the MONTHLY change the date for beginning its volume from April to January. Seeing the wisdom of this policy, we are making the change, effective with this issue. Not having reached the decision in time to have the Index for Volume 64 appear with the December number, we are enclosing that for April-December, 1937, inclusive, and also starting Volume 65 with this issue. We trust this adjustment will meet with the approval of our readers.

Southern Medical Meeting.

Around two thousand physicians were in attendance upon the meeting of the Southern Medical Association in New Orleans, La., November 30 through December 3, held under the presidency of Dr. Frank

K. Boland of Atlanta, Ga. Many matters of special interest were discussed and the social program added greatly to the pleasure of the occasion.

Dr. Ernest William Goodpasture, professor of pathology at the Vanderbilt University School of Medicine, was awarded the Association's Research Medal for the past year.

Oklahoma City, Okla., was selected as the 1938 place of meeting, the time to be the latter part of November. Dr. James Wilkinson Jervey, Sr., Greenville, S. C., was named president. The vice-presidents are Dr. Lucien A. Ledoux of New Orleans, and Dr. Lee Rice of San Antonio, Texas. Mr. C. P. Lorz of Birmingham, Ala., was re-elected secretary-manager.

The Southern Branch of the American Public Health Association, meeting in conjunction with the Southern Medical Association, elected Dr. James A. Hayne of Columbia, S. C., as its 1938 president, and re-elected Dr. G. Foard McGinnes of Richmond, Va., as secretary-treasurer.

The Seaboard Medical Association of Virginia and North Carolina

Held its forty-second annual meeting at the Cavalier Hotel, Virginia Beach, December 7-9, under the presidency of Dr. P. St. L. Moncure of Norfolk. A score or more of subjects were included in the program, an especially interesting subject being the symposium on Hypertension and Heart Disease. Special guests who presented papers were Dr. Perry Y. Jackson, professor of Chemistry at the Norfolk Division of the College of William and Mary, Dr. James Edwin Wood of the University of Virginia, and Dr. I. A. Bigger of the Medical College of Virginia. All papers were freely discussed. In addition to the excellent scientific program, there were several elaborate social entertainments.

Greenville, N. C., was selected as the place of the 1938 meeting, the dates being December 6, 7 and 8. Officers were elected as follows: President, Dr. W. I. Wooten of Greenville, N. C.; vice-presidents, Dr. O. R. Yates of Suffolk, Va., Dr. R. G. Tyndall of Kinston, N. C., Dr. C. P. Jones, Jr., of Newport News, Va., and Dr. G. B. Woodard of Wilson, N. C. Dr. Clarence Porter Jones of Newport News was re-elected secretary-treasurer.

The Tri-State Medical Association of the Carolinas and Virginia

Is to hold its annual meeting in Asheville, N. C., on February 21 and 22, under the presidency of Dr. Howard R. Masters of Richmond, Va. Headquarters for the meeting will be Grove Park Inn. Further information may be obtained from the secretary, Dr. J. M. Northington, Charlotte, N. C.

Medical College of Virginia News.

The Hospital Division of the college has been approved by the Council on Medical Education and Hospitals of the American Association for training residents in pathology.

Dr. George Z. Williams, assistant professor of pathology, has been added to the staff of city coroners and assigned to duty in South Richmond. Dr. Williams is the third man of the college staff to be assigned to this work, Dr. J. H. Scherer, and Dr. Paul Kimmelstiel having been appointed some time ago.

Dr. Lewis E. Jarrett, Director of the Hospital Division, has been elected vice-president of the American Hospital Association.

The addition of three new members to the adjunct faculty is announced. They are Dr. Thomas Beath, instructor in surgery; Dr. Benjamin Rawls, instructor in surgery, and Dr. A. G. Brown, III, instructor in medicine.

At Founders' Day exercises on December 7, Honorable S. Gardner Waller, Adjutant General, Commonwealth of Virginia, representing his Excellency, George C. Peery, presented a State flag to the college.

Dr. J. A. Myers, president of the National Tuberculosis Association and professor of preventive medicine at the University of Minnesota was a recent guest at the college. Dr. Myers lectured to the students on "Modern Weapons in the Control of Tuberculosis."

At the recent meeting of the Southern Medical Association in New Orleans, Dr. Harvey B. Haag was elected secretary of the section on medical education.

Dr. E. W. Skinner, associate professor of physics in the dental school of Northwestern University, was a recent guest of the college, giving a series of lectures.

News From University of Virginia, Department of Medicine.

At the meeting of the University of Virginia Medical Society on November 22, Dr. Joseph F. Geisinger of Stuart Circle Hospital, Richmond, spoke on Unexpected Massive Pathology in the Upper Urinary Tract, and Dr. J. D. Barney, of the Massachusetts General Hospital, Boston, discussed Some Recent Experiences with Urinary Lithiasis.

The Fourth Post-Graduate Course in Ophthalmology and Oto-Laryngology, including a series of lectures and clinics sponsored by the University of Virginia, was held at the Medical School on December 14-17. The speakers included Dr. F. H. Adler, University of Pennsylvania; Dr. Bernard Samuels, Cornell University Medical College; Mr. E. B. Burchell, Eno Laboratory, New York Eye and Ear Infirmary; Dr. James W. White, New York University; Dr. Oscar Batson, University of Pennsylvania; Dr. Vincent Archer, University of Virginia; Dr. Robert E. Buckley, Manhattan Eye, Ear and Throat Hospital; and Dr. Stacey R. Guild, Johns Hopkins University Hospital. Thirty-three physicians were registered for the course.

The New York Polyclinic Medical School and Hospital

Announces the following recent appointments to its staff: Dr. Thomas G. Tickle as professor of Otolaryngology; Dr. David H. Jones as clinical professor of Bronchoscopy; and Dr. Ernest E. Smith as adjunct professor of Roentgenology.

Interesting programs have been presented at the monthly meetings of its Clinical Society by outstanding specialists. At the January meeting, the following program will be presented: Foreign Bodies in the Air and Food Passages with Particular Stress on Peri-esophagitis by David H. Jones, M. D.; Bronchogenic Carcinoma by Charles E. Wolcott, M. D.; Lung Abscess with lantern slide demonstration, by H. Griffen Bullwinkel, M. D.; and Present Problems in Diabetes, by Elliott P. Joslin, M. D., of Boston, Mass. Discussion on the latter paper will be opened by Herman O. Mosenthal, M. D., and Frederick M. Allen, M. D.

Dr. Meyer Vitsky,

Who has been practicing in Richmond, Va., for several years, announces the limitation of his practice to obstetrics and gynecology. His offices are at 1103 West Franklin Street.

Dr. Charles A. Bland,

Recently of Clover, Va., late in November resigned from active duty as First Lieutenant, Medical Reserve Corps, U. S. A., assigned to Company 354, C. C. C., and located at Forest City, N. C., where he will be engaged in general practice. His offices are in Union Trust Building.

American Public Health Association.

October 25-28, 1938, have been selected as dates for the next meeting of the Association which will be in Kansas City, Mo. Dr. Edwin Henry Schorer, Director of the Kansas City Health Department, has been appointed Chairman of the Local Committee, and he will be assisted by a large group of city and state officials and community leaders.

A number of affiliated organizations meet regularly with the American Public Health Association, and it is expected that the attendance at the next meeting will exceed 3,000 professional public health workers from every State in the Union, Canada, Cuba and Mexico.

Dr. Arthur Davidman,

Class of '36, Medical College of Virginia, who has been in Washington, D. C., since completing his

internship at the Logan General Hospital, Logan, W. Va., has returned to the Logan Hospital, to accept the residency there.

Scientific Exhibits for A. M. A. Meeting.

Application blanks are now available for space in the Scientific Exhibit at the San Francisco Session of the American Medical Association, June 13-17, 1938. The Committee on Scientific Exhibit requires that all applicants fill out the regular forms. Blanks may be obtained from the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn St., Chicago, Illinois.

Approved for Residency in Otolaryngology.

The Gill Memorial Eye, Ear and Throat Hospital of Roanoke, Va., announces it has received official notification from the Council of Medical Education and Hospitals of the American Medical Association that it has been approved for residency in Otolaryngology.

Dr. T. Dewey Davis,

Richmond, Va., was initiated into Omicron Delta Kappa Honorary Fraternity at Washington and Lee University, early in December.

Association of Seaboard Air Line Railway Surgeons.

At the meeting of this Association in Miami, Fla., the middle of November, Dr. Joseph D. Collins of Portsmouth, Va., was elected president for the coming year, succeeding Dr. Beverley R. Tucker of Richmond, Va., and Dr. J. W. Palmer of Ailey, Ga., was re-elected secretary. At this meeting Dr. Collins, chief surgeon of the railway, was honored by being presented with a silver service, Dr. Palmer with a silver bowl, and Mr. Smith Brittingham, counsel for the railway, with a silver dish.

San Francisco A. M. A. Meeting.

The San Francisco session of the American Medical Association promises to be an outstanding one by reason of the scientific program, scientific and technical exhibits and the social functions. In addition, there is the lure of California with its scenic beauty, majestic mountains, fertile valleys and historical background. An opportunity presents to combine profit of the program with the pleasures of visiting San Francisco, the Golden Gate City with the two bridges, engineering wonders of the world.

The Local Committee on Arrangements cordially invites the profession of the country to be San Fran-

cisco guests for this occasion, June 13-17. A list of the San Francisco hotels, with rates, has been published in recent issues of the *Journal of the A. M. A.* Requests for reservations should be sent promptly to Dr. Frederick C. Warnshuis, 450 Sutter Street, San Francisco, Cal., giving names, type of accommodations desired, rates, dates of arrival and departure.

"Group Hospitalization",

Prepared by the Bureau of Medical Economics of the American Medical Association, is an exhaustive study of group hospitalization plans and hospital insurance companies throughout the United States, and is filled with facts of importance to every physician and hospital administrator. It contains 296 pages, sixteen tables and four appendices, and may be had for seventy-five cents, from the Association at 535 North Dearborn Street, Chicago.

Dr. I. A. Bigger,

Professor of Surgery at the Medical College of Virginia, Richmond, addressed the Washington (D. C.) Academy of Surgery on December 10, his subject being "Surgery of the Heart and Pericardium."

Virginians Honored.

According to a press notice recently released, Dr. William T. Sanger, president of the Medical College of Virginia, Dr. Bernard H. Kyle of Lynchburg, and Dr. Robert V. Funsten of the University of Virginia, have been appointed members of the orthopedic council of the National Foundation for Infantile Paralysis.

Dr. James H. Smoot,

Woodstock, Va., was recently re-elected president of the Shenandoah Fair Association.

Married.

Dr. Edward Carlisle Joyner, Suffolk, Va., and Miss Ruth Elizabeth German, Richmond, Va., December 6.

Dr. Snowden C. Hall, Danville, Va., and Miss Ida Shankle Hardman of Commerce, Ga., but recently of Durham, N. C., late in December.

Dates Selected for Tri-State Hospital Meeting.

It is announced that the Tri-State Hospital Association, including the Hospital Associations of Virginia, North and South Carolina, will be held at Columbia, S. C., April 14, 15 and 16. Dr. Lewis

E. Jarrett, superintendent of the Medical College of Virginia Hospitals, is president of the Virginia Association.

Dr. William P. Frazer,

Hamilton, Va., was among those elected to the board of directors of the Loudoun County Junior Chamber of Commerce at its organization meeting at Leesburg in December.

Dr. G. Bache Gill,

Prominent specialist of Washington, D. C., and an alumnus of the Medical College of Virginia, class of '16, has been elected commodore of the Corinthian Yacht Club for 1938. Dr. Gill has long been active in the development of motor boat activities in the Potomac and Chesapeake divisions, and is one of the members of that club who has assisted in developing the President's Cup regatta into one of the most important motor boat shows in America.

Dr. Robert H. Courtney,

Who has been associated with Dr. Emory Hill for a number of years, has announced the removal of his office to Suite 103, Professional Building, Fifth and Franklin Streets, Richmond, Va. He will continue his connection with the Medical College of Virginia as Associate Professor of Ophthalmology and Chief of the Eye Clinic.

Dr. A. M. Owen,

Long Island, Va., has been appointed by the School Electoral Board of Pittsylvania County to fill an unexpired term on the County School Board from the Staunton River District.

Officers of Alumni Association.

Alumni of Roanoke College in the Richmond, Va., area organized early in December, at which time Dr. E. R. Moorman of Kilmarnock was named vice-president, and Dr. Douglas G. Chapman of Richmond secretary.

Social Hygiene Day.

National Social Hygiene Day, the second observance of which has been set for February 2, 1938, by the American Social Hygiene Association, marks the high point in the year round effort to gain popular interest and support for the activities of the health authorities and the medical profession in dealing with syphilis and gonorrhea. "Stamp Out Syphilis—Enemy of Youth" is the slogan for 1938.

Suggestions for meetings and practical community

programs may be obtained from the American Social Hygiene Association, 50 West 50th Street, New York City. The Association will be glad to supply interested persons and groups with materials, such as exhibits, films, and literature.

The American Board of Internal Medicine

Will hold its next written examination on Monday, February 14, 1938, in various centers of the United States and Canada. It will consist of two sessions of three hours each with the morning session held at 9:00 A. M., and the afternoon session at 2:00 P. M.

The candidates who are successful in this written examination will be eligible to take the practical examination which will be held in San Francisco the Friday and Saturday prior to the opening of the Annual Session of the American Medical Association in June, 1938.

The final date for filing applications for this written examination is January 15, 1938, and all applications should be in the office of the chairman before that date. For further particulars and application blanks, please address Dr. Walter L. Bierring, M. D., Chairman, 1210, 406 Sixth Avenue, Des Moines, Iowa.

Handbook on Eye Hazards in Industry.

To secure wider distribution of its book on "Eye Hazards in Industrial Occupations" by Louis Resnick and Lewis H. Carris, the National Society for the Prevention of Blindness is now offering copies at the special price of fifty cents each as long as the supply lasts. This book, which sold formerly at the actual cost price of \$1.50, was published in 1924.

Civil Service Examinations.

The U. S. Civil Service Commission, Washington, D. C., announces open competitive examinations for Principal Consultant in Child Welfare Services and for Principal Consultant in Medical Social Work for Children. Applications must be on file with the Commission by January 10, from the eastern states. Application forms may be secured from the Secretary, Board of U. S. Civil Service Examiners, at any first-class post office or from the Commission in Washington.

For Sale—

Allison, "Rochester" style office examining table. Mahogany finish, six drawers and compartment,

pad and pillow, foot stand and stirrups. Used very little and in excellent condition. First reasonable offer takes. Located in Charlottesville, Va. Address "G. M.", care this Journal, Richmond, Va. (*Adv.*)

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Obituary Record

Dr. Herbert Roney Drewry,

A prominent physician of Norfolk, Va., in which place he had practiced for the past forty years, died on December 1, after a long illness. He was a native of Southampton County, Va., and seventy years of age. After attending Virginia Military Institute, he took up the study of medicine and graduated from the Medical College of Virginia in 1895. Dr. Drewry was always actively interested in the military and was retired only a few years ago with the rank of lieutenant-colonel. He held many positions of honor in his community and was identified with several medical organizations, including his local and State societies. His wife and two brothers survive him.

The following resolutions were adopted by the Norfolk County Medical Society on the death of Dr. Drewry:

On Wednesday the first day of December, nineteen hundred and thirty-seven at one P. M., after a lingering illness, Dr. Herbert Roney Drewry, passed from this life.

He had been a member of this society for more than forty years and for the past five years he had been an honorary member.

He was a gentle, kind and lovable character; a worthy and capable physician, who served his multitude of patients with no thought of his own comfort or reward.

He possessed a philosophy all his own, which at times simply exuded with amazing charm.

His keen sense of humor, which frequently gave expression, was always delightful to those whom he thus favored.

His devotion to his wife, relatives, and friends was in keeping with his other splendid reactions.

RESOLVED: 1. That in the death of Dr. Drewry, this society has lost a sincere friend and confrere and is deeply conscious of his loss.

2. That we hereby extend to his wife and relatives our profound sympathy.

3. That these resolutions be spread on the records of this society and that a copy of same be forwarded to Mrs. Drewry.

CHAS. W. DOUGHTIE
LOMAX GWATHMEY
C. J. ANDREWS

Dr. Oliver Allison Ryder,

Well-known physician of Alexandria, Va., died suddenly November 27, following an heart attack. He was a native of North Carolina and fifty years of age. Dr. Ryder graduated from the former University College of Medicine, Richmond, Va., in 1913, and began the practice of medicine in Christiansburg. In 1917, he entered the Army Medical Corps and, after retiring in 1919, with the rank of captain, spent several years of post-graduate study in pediatrics. Dr. Ryder had made his home in Alexandria since 1929 and has held a prominent place in the fraternal and professional life there. He was a past president of the Alexandria Medical Society and had been a member of the Medical Society of Virginia for twenty-four years. His wife and two children, by a former marriage, survive him.

Dr. Edward Massenberg Parker,

Emporia, Va., died December 16, having been in bad health for several years. He was a native of Courtland and seventy-two years of age. Dr. Parker graduated from the former Maryland Medical College, Baltimore, in 1900. He had practiced medicine in Emporia since his graduation. Dr. Parker had been a member of the Medical Society of Virginia for a number of years. His wife and a daughter survive him.

Dr. Robert Roy Hoskins,

Prominent Mathews County, Va., physician died at his home, "Springhill", on December 20, after a brief illness. He was sixty years of age and a graduate of the Medical College of Virginia, class of 1903. Since his graduation, Dr. Hoskins has spent most of the time practicing in Mathews, but during the World War he was captain in the Medical Corps

and stationed in New York. He was active in civic and medical affairs in his section. Dr. Hoskins had been a member of the Medical Society of Virginia since 1904. His wife and several children survive him.

Dr. William Chalmers Wills.

We have just learned of the death of Dr. Wills on August 22. This took place at a Richmond hospital, after a short and severe illness with septicemia. He was thirty-five years of age, and graduated in medicine from the University of Virginia in 1930. Dr. Wills located at Victoria, Va., about a year ago and was a member of his local and State medical societies. He is survived by his wife.

Dr. Thomas C. Harris,

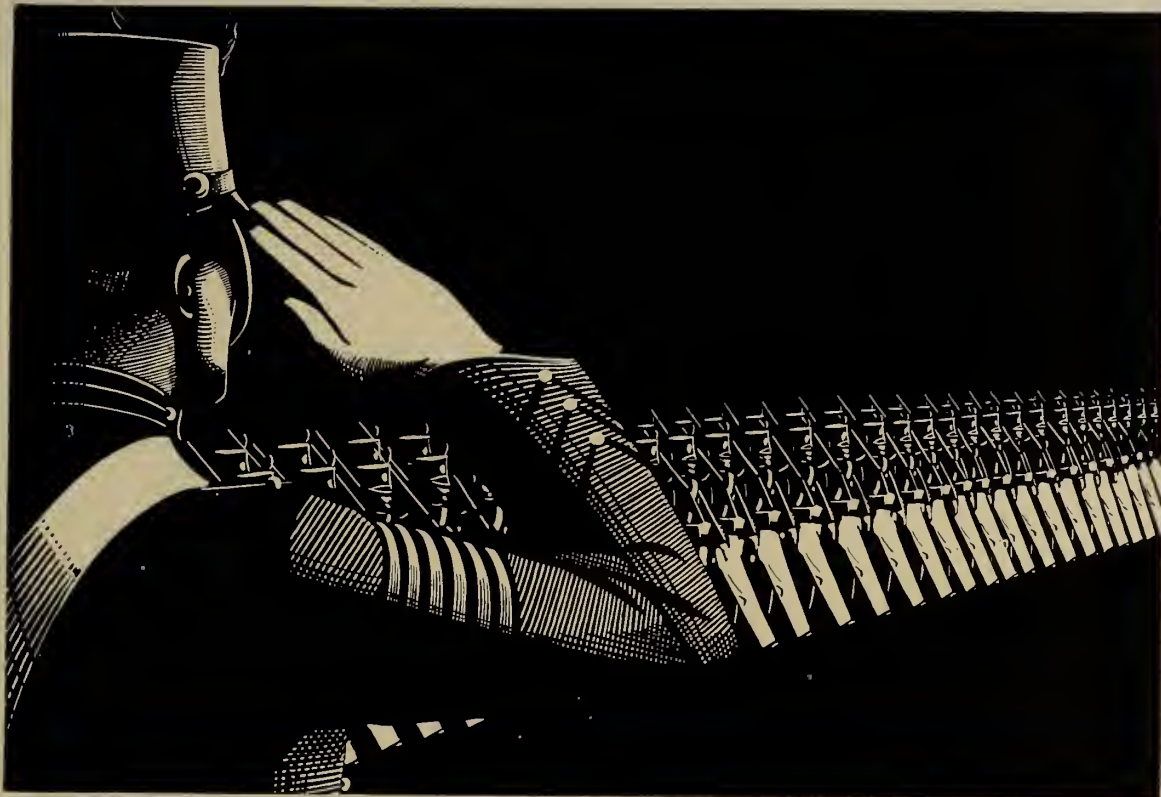
Centralia, Va., died at his home in that place on December 6. He was a native of Greensville County, Va., and sixty-one years of age. Dr. Harris studied medicine at the Medical College of Virginia, and was located for some time at Kenbridge, Va., before locating in Centralia. His wife and several children survive him.

Dr. C. Leonard Purdy,

Broadnax, Va., died November 28, having been in bad health for some time. He was a graduate of the former Southern Medical College, in Atlanta, in 1890. Dr. Purdy was active in civic affairs and was a member of the Brunswick County School Board. He was also a member of the Medical Society of Virginia. His wife and eight children survive him.

Dr. John F. Long,

One of the oldest physicians in the Shenandoah Valley, died at his home near Luray, Va., on December 8. He was eighty-eight years of age and practiced medicine for more than half a century before retiring. He studied for his profession at the Medical College of Virginia. He is survived by four children, one of them being Dr. George H. Long of Luray.



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VIRGINIA MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA
69th Annual Meeting, Medical Society of Virginia, Danville, Fall 1938

Vol. 65, No. 2,
WHOLE No. 1028

RICHMOND, VA., FEBRUARY, 1938

\$2.00 A YEAR
25 CENTS A COPY

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Entered as Second Class Matter at the Postoffice, Richmond, Va.

Are the Neuritic Symptoms of Pregnancy due to deficiency of Vitamins B₁ and G?

SUCH neuritic symptoms of pregnancy as pains in arms and legs, muscle weakness, and paralysis of the extremities may result from a shortage of antineuritic vitamins, recent investigations appear to show. Strauss and McDonald report that polyneuritis of pregnancy is a dietary deficiency disorder similar to beriberi, responding to treatment with dried brewers' yeast, rich in vitamins B₁ and G. Wechsler, Hirst, Luikart, Gustafson, and other authorities observe that the avitaminosis is probably the result of hyperemesis gravidarum.

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Virginia Medical Monthly

Official Publication of the Medical Society of Virginia

Vol. 65, No. 2.
WHOLE No. 1028

RICHMOND, VA., FEBRUARY, 1938

\$2.00 A YEAR
25 CENTS A COPY

THE DIABETIC FOOT.*

HARRY J. WARTHEN, M. D.,

and

WILLIAM R. JORDAN, M. D.,

Richmond, Virginia

No condition requires more careful cooperation between the attending physician and surgeon than does the treatment of surgical complications arising in the diabetic.

Every second diabetic at some time requires the treatment of a surgeon,¹ and a fifth of these need surgical treatment for a foot lesion. These are simple figures and not very imposing unless one remembers that one out of every fifty people will die with diabetes. In Virginia this means fifty thousand persons; in the Southside area seven thousand. In other words, seven hundred of the people under the care of the doctors represented by the Southside Society will require such surgical treatment as we now discuss. We can be sure that knowledge of this condition will not only postpone death in most of these people, but will restore them quickly to a useful and comfortable life.

Prevention of these disabling and even fatal conditions, such as gangrene, is of even more value than treating them once they are evident. That we can prevent or at least postpone them indefinitely is certain. Joslin reports¹ that the *physicians* under his care for diabetes have a mortality only one-fourth that of his unselected cases of corresponding age. This shows that knowledge of the disease controls to a large extent the results obtained. The time to begin this preventive treatment is now. Every patient seen, whether he be diabetic or not, should be instructed in the simple rules of personal hygiene, especially for foot care. Surgical lesions of the diabetic foot are the result usually of long-standing conditions which have gradually advanced to the point where slight precipitating causes initiate severe

disease. Among these conditions are calluses, corns, "athlete's foot," arteriosclerosis and degenerative nerve disease, as well as uncontrolled diabetes. The corn may have arisen in early life but may have caused no real trouble until poor circulation, aided and abetted by uncontrolled diabetes and improper diet, permitted a slight injury to progress to definite infection with gangrene following in short order. If the corn had been cured and a recurrence prevented, and if the diabetes and diet had been properly controlled, no infection of consequence would have arisen and gangrene would not have occurred. Even with the corn and arteriosclerosis it is doubtful if gangrene would have occurred if the precipitating cause, such as a tight shoe or a hot water bag, had not been encountered. Thus our attack can be directed along two lines—one, for the prevention or correction of underlying causes in every patient seen, and, two, for the elimination of precipitating causes in known diabetics with vulnerable feet.

The rules are so simple that we are seldom impressed by them, and the patient pays even less heed to them. We list below the rules for foot hygiene² which we should teach our patients:

1. Wash feet daily with soap and water and dry thoroughly by pressure.
2. Rub with lanolin as often as necessary to keep the nails pliable and the skin soft but not tender. If too soft, use rubbing alcohol once daily.
3. Cut the nails only in a good light and after a bath when the feet and hands are clean and the nails softened. Cut almost straight across so that the corners may grow out normally.
4. Separate all over-lapping or tightly compressed toes with lamb's wool.

*Delivered before the Southside Virginia Medical Association, at Burkeville, Va., September 14, 1937.

5. Wear shoes of soft leather which fit properly and are not run-down at the heels or have rough lining.

6. Alternate the use of two pairs of shoes every few days.

7. Wear new shoes one-half hour the first day and increase this time by only one hour each successive day.

8. Wear clean socks of the proper size and without holes or rough darns or seams.

9. Do no use heating appliances. Try bed socks if needed.

10. Do not put the bare foot on the floor.

11. Elderly diabetics should not cross the legs or wear circular garters. Make use of daily rest periods during which the shoes are removed. Be very cautious about the feet.

12. Diabetics afflicted with poor vision, stiff joints or loss of manual skill should employ another person to trim the nails and give foot care.

The treatment of corns and calluses requires little addition to the above rules.

1. Wear the proper shoes and socks.

2. Use exercises such as flexing, extending and spreading the toes.

3. In walking, finish each step on the toes and not on the ball of the foot.

4. Keep the area soft with the daily use of lanolin.

5. Twice a week soak the feet in warm, soapy water until the calloused skin is softened and then rub off with gauze the loosened, dead skin. Do not cut, tear, or remove corns or calluses with plasters or other medicine.

6. If you consult a chiropodist, tell him you have diabetes.

Once a surgical lesion, even a small abrasion or blister, develops, the diabetic should consult his doctor promptly. Immediate attention to the lesion and continuous control of the diabetes should be instituted. An apparently innocuous lesion all too often leads to amputation or to a premature death. The diet should be adequate for the patient's every need and the blood and urine sugar controlled, if necessary with insulin. Marked fluctuations in the blood sugar level are to be avoided. Too low a blood sugar may prove as harmful as one too high. Particularly is this true in the elderly diabetic in whom an attack of coronary disease or apoplexy may follow an insulin reaction. The distribution of the insulin

throughout the day is just as important as the total dosage given. The new protamine insulin helps us in maintaining an even blood sugar level, but we may have recourse to both kinds in managing the diabetes. All of us are familiar with the improvement in these foot cases as soon as the diabetes is brought under control, and most surgeons are cognizant of the better results they obtain if the diabetes is properly managed. Frequent tests and detailed care are essential, and time thus spent is well repaid.

Surgical complications of the lower extremity fall clinically into two groups, depending upon whether the condition is due primarily to infection or to impaired circulation. The condition may vary in severity from a localized infection in a foot with a relatively good blood supply to an extensive gangrene with an associated spreading infection. Dissimilar as these two extremes may appear, they differ only in degree, depending locally upon three variables. These are the competence of the circulation, the virulence of the infecting organism and the duration of the immediate process. In a previously untreated case the first two factors are beyond the control of the attending physician, but the third element—that of time—becomes the responsibility of the medical attendant as soon as he sees the patient. A localized abscess of the foot in a diabetic requires drainage as urgently as an inflamed appendix demands removal from the peritoneal cavity, and an unamputated infected gangrenous foot is no more compatible with life than an unclosed perforated ulcer of the duodenum. If the local condition necessitates immediate operation the diabetes should not be considered a contraindication to surgery for the general condition will not improve until the septic focus is removed.

The surgical procedure indicated depends upon three factors. These are, first, the type and extent of the infection; second, the circulation of the part; and, third, the life expectancy and economic necessities of the patient.

Diffuse superficial infections with a competent blood supply usually respond promptly to rest, elevation, Dakin's compresses and a careful regulation of the diabetes. The same type of infection in a part with a poor blood supply frequently improves temporarily under this therapy and a delayed and more limited operative procedure often effects a cure. A localized abscess necessitates immediate drainage.

Evacuation of pus in a diabetic not only prevents local spread of the process and relieves the general effects of sepsis in an already handicapped subject, but also diminishes the edema about the infection and improves the blood supply distal to the affected part. A striking change in the color of the toes frequently follows drainage of an abscess of the dorsum or sole of the foot.

A deeply situated spreading infection usually requires immediate amputation and the presence of gas-forming organisms necessitates a guillotine amputation through the thigh with later secondary closure of the stump. Gas gangrene is a not infrequent complication of infections in diabetics and sometimes occurs without a demonstrable break in the skin. Over eight per cent of all cases of proven gas gangrene treated in the Medical College of Virginia Hospitals occurred in diabetics.³

In the final analysis, the extent of the operative treatment in diabetic extremities varies directly with the degree of circulatory impairment. Amputation of a gangrenous toe is justifiable if the circulation of the foot appears competent and if the foot is relatively free from pain. Amputation through the lower thigh is indicated, when, in addition to the local gangrene, the circulation of the foot is incompetent, infection is spreading, or the severity of the pain indicates a wide-spread arteriosclerosis.

When the life expectancy of the patient is short or the economic necessities demand a minimal period of disability, a more radical procedure that offers a shorter hospital stay is not only justifiable, but indicated, in carefully selected cases.

Occasionally the response of a diabetic infection or localized gangrene to a minor operative procedure is remarkably satisfactory. Thus emboldened and frequently at the urgent request of the patient, the surgeon may attempt an incomplete operation with less favorable results. Such a situation requires early recognition and a readiness on the part of the surgeon to change the treatment immediately. Conservative surgery in diabetics is frequently a method of trial and error, but *the greatest error arises from failing to realize that the trial has been unsuccessful.*

The appearance of the wound during the first few days following operation is usually a reliable guide. If the infection spreads or sloughing continues, re-amputation is necessary. If the wound bleeds freely and healthy granulations appear, healing should

ultimately occur. During the period of uncertainty which follows minimal operations upon diabetic extremities the wound should be examined daily by the attending surgeon. The dressings should not be delegated to an assistant during this critical time.

Especial care of the skin is needed in diabetics. Wet dressings may macerate the skin and the area about the wound should be protected by zinc oxide or some other bland ointment. Pressure sores over the heels or malleoli may be prevented by suitably placed pillows. A thick woollen sock will give comfort and protection to the uninvolved foot. A cradle beneath the bed clothes or a tongue depressor strapped to the foot with adhesive will prevent pressure from the covers and actual ulceration of the toes may be avoided in this manner. The prevention of decubitus ulcers is, of course, imperative in these debilitated patients. This is facilitated by frequent alcohol rubs and an overhead bar suspended from a Balkan frame.

Two illustrative cases are reported briefly:

Case Report 1. Mrs. S. E. M., a fifty-four-year-old widowed white housewife, was admitted to the Sheltering Arms Hospital on November 4, 1936, complaining of infected toes of the right foot. Her past history was not significant aside from diabetes for the past five years. The diabetes was untreated until two weeks prior to admission. During this period the diabetes was brought under control. She dated her present illness to an abrasion of the right second toe received three weeks before admission from a nail in her shoe. The area became infected and the pain and swelling brought her reluctantly to the hospital. Physical examination showed extensive infection in the flexor creases of the four lateral toes with extension into the plantar surface of the foot. Osteomyelitis was present in the four involved toes. The toes were cyanotic and cool. A pulse could be felt in the dorsalis pedis and posterior tibial arteries. Several large blisters were present over the foot and toes as a result of a self-applied hot water bottle. The routine blood studies were not remarkable. The Wassermann reaction was negative. The temperature was 100.4, pulse 120, respiration 20.

Hot wet boric acid dressings were applied the day of admission in an attempt to decrease the infection. On the day following admission, after the injection of seventy-five mg. of procaine intraspinally, the four lateral toes were disarticulated at the metatarso-

phalangeal joints. Moderate bleeding ensued. The wound was packed open with gauze. The great toe appeared uninvolved and was not removed. The pathologic examination showed necrotizing, phlegmonous inflammation with secondary periostitis, osteomyelitis, and thrombophlebitis. Dakin's compresses were applied shortly after operation—a superficial slough separated—granulations appeared

tolytic agent to a bunion three months before admission to the Retreat for the Sick Hospital on December 29, 1936. In peeling off the skin slight bleeding was produced. Infection developed and progressed in spite of medical and surgical treatment. When first seen by us, an infected callus of the left great toe was present, with widespread infection of the distal plantar surface of the foot and a dusky dis-



Case No. 1. Photograph was taken five months following disarticulation of four lateral toes. Healing is complete and patient has a good weight-bearing foot. The great toe was not removed for motion at metatarso-phalangeal joint was free and the operator wished to avoid unnecessary operative trauma with subsequent delayed healing.



Case No. 2. Photograph was taken one month following operation. The healed incision may be seen at the base of the four medial toes.

and the wound closed slowly. About five weeks following operation the skin margins were strapped with adhesive strips and epithelium gradually grew across the defect. On January 14, ten weeks following admission, the patient was discharged from the hospital with the incision clean and healing well. Within the next ten weeks healing was complete in every respect and full use of the foot was obtained. No further trouble has been had.

Case Report 2. Mrs. E. M. G., a sixty-six-year-old housewife, with diabetes of fifteen years duration and moderate arteriosclerosis, applied a kera-

coloration over the dorsum. The usual blood studies were not remarkable. The Wassermann reaction was negative. An X-ray nine days earlier had shown no bone involvement. The circulation of the foot was only fair, and the dorsalis pedis pulse was barely palpable.

Regulation of the diabetes was begun and the foot was incised and drained under spinal anesthesia on the day of admission. The color of the foot improved immediately. Sixteen days later the patient was discharged from the hospital with the wound almost completely healed. During the next week the wound healed entirely and no further trouble has been had.

SUMMARY

1. A knowledge of the good results obtainable in the handling of surgical lesions of the diabetic foot stimulates greater interest in their treatment.

2. Premature death or unnecessary amputations may result from neglect or improper treatment of apparently minor lesions of the feet in diabetics.

3. Detailed medical and surgical care is essential not only to obtain a good result with the existing lesion but also to prevent complications.

4. The surgical procedure indicated depends upon the degree of infection, the circulation of the part, and the general prognosis of the patient.

5. The outcome in any case is determined by considerations that are insignificant in the handling of similar lesions in a younger person without diabetes.

6. Two case reports are given illustrating the efficacy of minimal operative procedures in carefully selected cases.

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Medical Arts Building.

TUBERCULOSIS—RESULTS OF A CLINICAL SURVEY.

C. L. HARRELL, M. D.,

A. D. PARKER, M. D.,

and

R. B. GRINNAN, JR., M. D.,

Norfolk, Virginia

In these days great emphasis is being placed on Public Health Medicine and the prevention of disease. There appears at almost every turn a paper in this connection on the various aspects of tuberculosis, its prevention and cure. A great deal of emphasis has been placed on the importance of surveys of some sort to find tuberculosis before it has reached an advanced and contagious stage and at which time it is "curable" by rest in bed, or one of the simpler treatments. This paper is the report of such a survey carried out by the Elizabeth City County Health Department with the assistance of the State Health Department of Virginia.

The survey was carried out by having tuberculin (O. T. was used, .001 mg. being used in the first test and all non-reactors retested with 1.0 mg.) made on one thousand and fifty-five children, colored and white of high and grammar school age. Three hundred and fifty-three of those tested were found to be positive. Of the three hundred and fifty-three, two hundred and thirty-eight were found to be strongly positive. This strongly positive group were X-rayed and given a physical examination of the ears, nose, throat, lungs and heart. The examinations were carried out by the authors.

TABLE 1

| | Totals | White | Colored |
|---------------------------------|--------|-------|---------|
| Tuberculin Tests | 1,055 | --- | --- |
| Positive Reactors | 353 | --- | --- |
| Strongly Positive Reactors..... | 238 | 131 | 107 |
| Found Positive by X-ray..... | 8 | 5 | 3 |
| Very Suspicious by X-ray..... | 10 | 5 | 5 |
| Known Contacts | 59 | 43 | 16 |
| Per Cent of Contacts..... | 24.8 | 32.9 | 14.9 |

A diagnosis of tuberculosis in a minimal or more advanced stage was made in eight cases. Two of these were minimal childhood type and, while probably quiescent, were considered serious enough to be called positive and closely followed. Four others were minimal cases with a small amount of parenchymal infiltration. The activity of these is to be more carefully determined by close watching, partial or complete bed rest, and subsequent follow-up X-rays. One of these cases was definitely active with cavity formation, one and one-half to two cm. in diameter. The seventh case was what appeared to be an arrested condition of almost miliary distribution in the lung fields. The wide-spread nature of the disease in this child, however, presents an ultimately grave prognosis. The eighth case was bilateral in extent and considered moderately advanced. One of the positive minimal cases was a

school teacher. Four of these patients were advised to take sanatorium treatment, and two had gone when this paper was being written. Of the eight cases only three presented positive signs on physical examination that would lead one to suspect tuberculosis.

The following is a statistical table of the positive cases.

TABLE II—POSITIVE CASES

| Case No. | Age | Sex | Race | Contact | | Stage of Disease |
|----------|-----|-----|------|----------|--------------|----------------------|
| | | | | Familial | Not Familial | |
| 1 | 15 | M | W | + | + | childhood minimal |
| 2 | 13 | M | W | + | + | childhood minimal |
| 3 | 17 | M | C | 0 | 0 | early minimal |
| 4 | 17 | F | W | + | + | minimal with cavity |
| 5 | 16 | F | W | + | + | early minimal |
| 6 | 26 | F | W | 0 | 0 | minimal |
| 7 | 15 | M | C | + | + | miliary (?) arrested |
| 8 | 17 | F | C | 0 | 0 | moderately advanced |

The age range is from thirteen to twenty-six. The sexes are evenly divided. There are five white to three colored cases. This is somewhat surprising since the case rate among the negroes is actually higher than among the white race. Sixty-two and five-tenths per cent were contacts in the home and outside the home.

Another set of ten very suspicious cases were set aside to be closely followed. See Table III.

TABLE III—VERY SUSPICIOUS CASES

| Case No. | Age | Sex | Race | Contact | |
|----------|-----|-----|------|----------|--------------|
| | | | | Familial | Not Familial |
| 1 | 15 | F | W | + | + |
| 2 | 18 | F | W | + | + |
| 3 | 20 | F | C | 0 | 0 |
| 4 | 15 | F | C | 0 | 0 |
| 5 | 15 | F | C | 0 | 0 |
| 6 | 13 | F | W | + | + |
| 7 | 16 | M | C | 0 | 0 |
| 8 | 19 | M | W | 0 | 0 |
| 9 | 16 | M | W | 0 | 0 |
| 10 | 16 | F | C | 0 | 0 |

The noteworthy fact about the very suspicious group is the fact that only one of the negroes admitted contact and this was non-familial. This is also true of the positive group. The reason probably is the lack of knowledge of the colored children or their elders of the causes of illness and death among their people.

Out of the remaining 220 strongly positive tuberculins, 121 were white, and ninety-nine colored. There were thirty-six white contacts in this group and only fourteen negro contacts. The discrepancy in colored contacts is explained above.

The cost of this survey was remarkably small. The actual cost would be difficult to determine since a part of it was absorbed in the routine expenses of the State and County-paid Health Officers, Nurses and Roentgenologists. The total known outlay was about five hundred dollars and the total expenditure considerably less than a thousand dollars.

The results are certainly encouraging. A teacher with positive tuberculosis was discovered and as a possible focus will be eliminated. The school children with positive cases were found at a time when they can be followed and adequately cared for. A clue to known contacts was discovered and future thorough investigation and case search may be made in this direction. As a side issue, poor dental hygiene, upper respiratory pathology and heart involvement could be discovered and treatment advised through the family dentist and physician.

The good health and money saved by the discovery of these cases is incalculable from a standpoint of possible future contacts that might result if these cases were allowed to advance to productive tuberculosis and from the standpoint of their own possible future morbidity and mortality. It is significant to note the high contact rate among the definitely positive cases, as well as in all the positive tuberculins which was 24.8 per cent.

Comment: Tuberculosis in the teen age is apparently on the increase, certainly among the females. It cost approximately a thousand dollars a year in this state to treat a well-advanced case of tuberculosis. The survey as made, costs a little over a dollar a person. If through such a survey as this, one person in each thousand examined could be saved, it would more than pay the cost. We strongly recommend and urge that each community arrange where possible to examine its high school children once a year. It will prove to be of great economic value as well as a health protection to the community.

Conclusion: A survey for the finding of tuberculosis among school children has been presented. The results we believe demonstrate clearly what can be accomplished by this type of work and are certainly most encouraging. We believe that this is the logical method of attack on tuberculosis and with minor alterations for a given situation is generally applicable. We would like to see more surveys of this sort carried out in Virginia where the incidence of the disease is known to be high.

ENDOCRINE THERAPY—ITS RELATION TO OPHTHALMOLOGY AND OTOLARYNGOLOGY.*

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Our patients' apparent major pathological defects do not always form the greatest problems of our medical practice. A diagnosis is of first importance, and, after it is made, the problem becomes ordinary and loses much of its formidableness. It is, therefore, the patient with the indefinite, functional type of symptom complex which affords us the greatest difficulty in our work. These patients often have a real problem and continue to suffer because we fail to locate the underlying dysfunction. They become embarrassed by the repeated, futile efforts made by us to relieve them and are really a bore and a drudge in our routine practice. Even their constancy fails and they leave us for the more sympathetic attention of the charlatan. We have given them up as hopeless, and usually the term neurotic is applied to account for our failure and to cloak our ignorance.

The few past years have seen a great change in the specialist. There was grave danger of over specialization or limiting one's knowledge to his specialty alone. Happily, especially in otolaryngology and ophthalmology, the organs of special sense are no longer viewed as isolated organs, but as highly specialized end-organs of the central nervous system. As such, they are directly dependent on the rest of the body. Metabolism, elimination and food and fluid intake play a great part in their health and disease. As we learn more of the autonomic nervous system and endocrine physiology we shall know more of health and disease in our special field of endeavor.

It is the specialist's duty to diagnose any case which comes to him, rather than to merely recognize that its treatment does not belong in his immediate field. To do this, we must take careful histories, including personal questions such as might bring to light menstrual disturbances, sexual abnormalities, pregnancies, etc.

In recent years the study of the physiology of the ductless glands has unfolded a maze of apparently

contradictory ideas and facts. Out of this confusion has come some apparently well established and accepted views, which are borne out by experiments. At this time it would seem wise to briefly state some of the best established theories.

The thyroid gland's chief function is to increase the oxidation processes or metabolism of the body. Thereby, all bodily activities are affected by the state of the thyroid function. While the graver dysfunctions of the thyroid are known, it is to be expected that further knowledge will lead to an understanding of many lesser disabilities, not now recognized as due to thyroid dysfunction. It seems entirely logical to me, too, that the metabolic rate may also vary from slight to a marked increase or decrease. It seems that the arbitrary setting of plus ten and minus ten as normal is only justified as an error of the method of taking it rather than to consider it normal. This is especially true of low minus readings, because few, if any, extraneous factors cause a lower reading, while excitement, lack of rest, emotion, etc., may increase the reading. It has been my experience that small minus readings with other slight signs of thyroid deficiency may be relieved by thyroid therapy. It is with these slight dysfunctions that this paper is chiefly concerned, and in the absence of definite proof of these statements it is hoped that your further study will be stimulated.

Iodine is stored in the thyroid. Iodothyroglobulin is the true hormone and thyroxine is its chemically active principle. An increase of this hormone in the blood causes symptoms of hyperthyroidism with increased metabolism of fats, proteins, and carbohydrates, with an increase in excretion of minerals, especially calcium and magnesium.

The thyroid consists of (1) Chief, or actively secreting cells and (2) Colloid, or the collapsed or spent cells. In the normal thyroid the chief cells predominate, but their number varies directly with the secretory activity of the gland.

When the thyroid tissue is insufficient to produce sufficient thyroid hormone, hypertrophy takes place

*Read before the Virginia Society of Ophthalmology and Otolaryngology, at Staunton, Va., May 8, 1937.

in the gland. This is true whether the insufficiency is caused by reduced iodine intake, increased demands of body, or partial thyroidectomy. When the secretion becomes sufficient, the gland returns to the quiescent colloid or physiologically normal stage.

With hyperplasia, there is less iodine in the thyroid and this results in hypersecretion to renew the store. Functional hyperplasia indicates relative or absolute iodine deficiency, while the colloid goitre is the physiologically normal stage of recovery and rest.

Feeding iodine increases the store of iodine in the thyroid gland. Fish increases the store and meat diet reduces it. The iodine store is also lowered in the Spring and increased in the late Summer. Calcium diminishes the thyroxin action. In the Valley of Virginia there is much calcium, little fish, and a heavy meat diet is eaten. Possibly this accounts for the hypertrophied glands prevalent and the large number of low thyroid cases seen in the writer's practice.

Interrelation: There is a thyrotrophic hormone secreted by the anterior lobe of the pituitary gland which stimulates the thyroid. By thus stimulating the gland, the iodine store is reduced, the blood iodine and the metabolic rate increased, as well as increase in excretion of calcium and creatinin. Exophthalmic goitre may result if stimulation be carried too far. If the thyrotrophic hormone is diminished, hypothyroidism, or Cull's disease, results. This mechanism is very delicately balanced, a deficiency of thyroxin in blood stimulating the pituitary to put out more thyrotrophic hormone. As the demands of the body for this are supplied by increased thyroxin, the anterior pituitary activity is decreased. The thyroid can be stimulated only by the pituitary produced thyrotrophic hormone.

The thyroid is also related in action to the sex glands, thymus, liver, adrenals, etc., but this is probably due to the effect of the thyroid on the pituitary which, while putting out more thyroxin, also puts out hormone which stimulates these glands.

From the foregoing it seems clear that varying stages of thyroid activity determines the amount of thyroxin secreted. Symptoms of hypo- or hyper-activity in turn vary directly with the amount of this substance in the blood.

With hyper-activity of the gland, whether due to low iodine intake or over secretion of the pituitary

produced, thyrotrophic hormone, the symptoms vary from quickened pulse, nervousness, slight tremor, slight rise in blood pressure, eye muscle, imbalance and globus, to those of the more severe exophthalmic goitre.

In hypo-activity the symptoms and signs are very complex and may mildly resemble the hyper-type. They vary from nervousness, increase in weight, dry and scaly skin, brittle hair, tiring on slight exertion and menstrual irregularities, to those of severe myxedema and cretinism. Worry over trivial matters and depression, palor (frequently due to secondary anemia), and tendency towards obesity.

Fullness of the ears, with or without tinnitus or vertigo with deafness simulating a mixture of conduction and perception dysfunction, is often seen. These cases seek the aid of the aurist first as the ear symptoms bring forcefully to the patient the fact that something is wrong. These cases may or may not be forerunners to more serious otosclerosis, and usually occur in young adults, especially women. Their whole register seems to be affected.

Disturbances of ocular muscle balance, especially convergence insufficiency with eye strain symptoms when only a small refractive error exists, is a picture frequently seen in thyroid insufficiency.

These signs and symptoms vary markedly in severity and it is wise to emphasize again the necessity of a careful history to bring them to light.

The mucosa of the nose is often dry and plastered with secretion and the patient may have very little resistance to colds. Vague neuralgic like pains about the face, especially upper maxilla and post-auricular, are associated.

Tinnitus and middle ear deafness, especially in middle aged and older people are often relieved by iodine therapy. In my hands potassium iodide has proven of great help. This might be associated in some way to low production of thyrotrophic hormone by the pituitary gland.

Treatment: It seems wise to refer these cases but often a little thyroid, as small doses as $\frac{1}{2}$ gr. t.i.d. to test out tolerance, is of use. Iodides have been mentioned.

A case which will illustrate graphically a mild thyroid deficiency follows. Mrs. L. B., a young married woman, had symptoms as follows: Tachycardia, palpitation, tendency towards stoutness, fullness of ears, and feeling of slight deafness, neuralgic

pains in face, neck, and hands, irregular and painful menstruation. B. M. R.-20. Small doses of thyroid immediately relieved the ears, and helped general nervousness and menstrual disturbances.

Mrs. M. W., thirty-four years of age, married twelve years, no pregnancies, low libido. Tendency to be fat and very nervous. Marked symptoms of eye strain and many refractions by many oculists. Glasses changed (only slightly) every six months. Ears stopped up and deafness of varying degrees. Loss of both upper and lower tones. Ears catheterized hundreds of times. Very nervous and complains continually of physical discomfort. Terrible nuisance after years of treating with no results. Vague pains in throat, neck, face, and headaches frequent. Basal metabolism, minus 8. Thyroid extract given. No more ear treatments, less deaf patient thinks, and apparently some improvement. Wearing same glasses given two years ago. No headaches. Seldom complains, but does sometimes.

The Pituitary Gland: We have spoken of the stimulating action of the pituitary on the thyroid, and the probability that it exerts a similar action on the other ductless glands.

Acromegaly and dwarfism are extremes of pituitary dysfunction, but, as we learn more of its physiology, other minor signs of dysfunction will probably be relieved by pituitary therapy.

We are familiar with bitemporal hemianopsia associated with pituitary tumor. Loss of accommodation is often severe and periodical headaches, especially in women, are frequent symptoms of dysfunction. Loss of hair and impotence are prominent symptoms in men, while severe menorrhagia may be present in women.

Antuitrin-S may be used in many of these cases to an advantage, but often must be incorporated with one or more other glandular substances, depending on the symptom syndrome.

Case Report: Mr. C. H., age twenty-five, a well-developed man of muscular build who labors on road, has been impotent for about one year. Has found it necessary to change glasses frequently, and eyes are very uncomfortable with strain. Has to hold work further away, and has trouble focussing on close work. Has been losing hair for about two years. No tendency towards obesity. Examination essentially negative except concentric contraction of both fields for form. Presbyopia amounted to one

dioptré. X-ray shows evidence of tumor in region of sella turcica. Antuitrin-S has been of marked help to this patient.

Adrenal Glands: Adrenal deficiency has been studied chiefly in Addison's disease. Loss of sodium chloride, dehydration, hypoglycemia, muscular weakness, hypotension, local neurologic symptoms such as aphasia and confusion are frequent symptoms. There is some evidence that immunity to infections is diminished by lowered adrenalin secretion. Too little is known of the physiology of this gland to state definite indications for therapy, but today cortin is being widely advocated for many symptoms, especially weariness and hypotension.

There is evidence that adrenalin is of value in the treatment of myopia. The instillation of several drops three times daily has seemed to me to be of value in the myopias which tend to increase about the age of puberty.

Adrenalin is also of use to reinforce the action of atropine, when we want quick and active dilatation of the pupil.

Its use in allergic cases and their eye, ear, nose and throat sequelae, is generally recognized and need only be mentioned here.

Parathyroids: These glands are active chiefly in the metabolism of calcium and phosphorus. Bone and teeth calcification depend upon them.

The ionic calcium in the blood serum serves to control the varying normal degrees of nerve irritability and that of both voluntary and involuntary muscles. This nerve irritability manifests itself from slight twitching, of which the facial tics of children may be a part, to general convulsions.

The clotting time of the blood is materially affected by calcium deficiency and often it is wise to combine calcium and parathyroid therapy.

In calcium deficiencies the symptoms vary from slight changes in the teeth with loss of enamel, susceptibility to colds and sinus troubles, increased nasal secretions, to marked deformities and softening of skeletal bones.

Ovaries: The menopausal symptoms will be discussed briefly and its interest to otolaryngology emphasized.

The menopause is the result of the withdrawal of ovarian influence on the rest of the body as a whole. It is probably caused by an increase of Prolan-A production. It should be borne in mind that other

glands may be in a state of dysfunction during the menopause and these should be considered in any treatment planned. The menopause usually occurs between the ages of forty to fifty and the chief symptoms are cessation of menses, vasomotor and nervous symptoms, psychic disturbances, anatomical changes, and diminished libido.

1. Cessation of menses is the rule, but early in its onset flooding and irregularities are not uncommon.

2. Vasomotor symptoms are often distressing and occur in about 75 per cent of cases. Hot flashes, sweating, fainting, dizziness and feeling of fullness of head are frequent complaints. Globus is often present but is probably more often seen in cases where the thyroid is also affected.

3. Nervousness is nearly always admitted and symptoms of paresthesia in various places is common. Pains along the lateral pharynx is frequent and often, following tonsillectomy about this age, becomes distressing. Nothing or only slight congestion of the lateral pharynx is seen. Pain in gums and difficulty in fitting plates in these patients' mouths is a problem. Post-auricular pains and pains in extremities are often mistaken for rheumatism, and teeth and tonsils are often unnecessarily sacrificed.

Numbness, sensation of cold and crawling sensation in the extremities, especially the fingers, are frequent. Stiffness of hands and knees are often due to ovarian insufficiency and are frequently relieved by substitution therapy.

4. These patients are often psychically disturbed. They are emotionally unstable and burst into tears with little or no cause. Their character may change with increased irritability and excitability with worry about trivial matters. Apprehension and depression are distressing symptoms and patients believe they are going crazy. Suicidal tendencies occur often and those cases with delusions should be carefully watched and cared for. Worry over in-

significant things, not considered before, is often admitted by the patient.

5. Anatomical changes, retrogression and atrophy of ovaries, uterus, external genitalia, breasts, and increase in body weight are usually seen. Sexual desire may diminish, but also may remain same or increase.

Treatment: Sedatives as bromides and barbiturates. Estrin in form of theelin. X-ray of anterior pituitary gland kills castration cells.

Case Report: Mrs. C., forty-four years old, still menstruating but irregular for first time. Occasional hot flash and irritable, although of phlegmatic nature. Tonsils removed three years ago and felt as if never healed. Feeling of discomfort on swallowing and scratchy feeling in pharynx. Treated continuously and said to have had some infection. Tonsils out cleanly; pharynx normal, but lateral pharyngeal walls slightly congested on both sides. Little scar tissue. Nothing to treat. Theelin used and relieved entirely with help of general symptoms. No other treatment given.

SUMMARY

1. The fact is emphasized that minus B. M. R. should be repeated or therapeutic test applied, for no extraneous causes lower it.

2. The importance of including gynecological and sociological questions in our histories is emphasized.

3. Fullness in ears, with deafness, often simulating early otosclerosis should stimulate us to more complete study of these very early cases which can frequently be relieved by endocrine substitution therapy.

4. Vague pains about face, teeth, and neck are often relieved by endocrine therapy. After clean tonsillectomy in women about forty years of age, pain in pharynx is often a persistent symptom, relieved by theelin or other attention to menopausal dysfunction.

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WHAT MEDICAL AND PSYCHIATRIC FORCES CAN DO TO REDUCE CRIME.*

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The time allotted to this essay indicates that the simplest presentation of medical and psychiatric data applicable to the present situation in Virginia is desired. In the discussion of crime the terms medicine and psychiatry are synonymous, as psychiatry is that part of medicine concerned with abnormal behavior; therefore, any medical consideration of that species of abnormal behavior known as crime would be classed as psychiatric. The two terms will be used interchangeably. The aid that medicine or psychiatry can give in prevention will have one of the following characteristics: it will be educative; it will be diagnostic, or it will be therapeutic. Therefore, the following suggestions from the great mass of psychiatric material dealing with crime will be presented in this order.

For many years medical men have recognized crime as a form of disease and have sought to apply the methods of analysis used in the sick room to the diagnosis and treatment of the criminal. Certainly, anti-social behavior arises from a mixture of heredity and environment just as social behavior does and, therefore, a correct diagnosis and treatment of the criminal calls for a knowledge of these factors. Just as the abnormal personality reactions seen in some forms of mental disease arise from the inability of the individual to meet the demands of group life, so the anti-social disorders are expressions of the inability of civilized society to meet the needs of the individual. In mental disease the treatment of the individual is the most important point of attack and sociological conditions secondary, while in crime, unless there is also mental disease, sociological conditions are in greatest need of treatment and the individual secondary.

Psychiatrists, therefore, as well as others, desire to spread abroad the fact that outbreaks in crime in any community signify one of two things; either that diseased sociological conditions exist in that community or that there are persons with mental

disorders who have not been properly handled. It is of no avail to try to hide social offenders from public view in penal institutions if nothing is done to correct the social condition that produced the crime, or to rearrange the behavior of the individual so that he can get along with the social order. To think that jail sentences or other forms of fixed punishment will cure a diseased social condition or a diseased personality smacks of the greatest of crimes; that of self-righteousness based on gross ignorance.

The first step in the medical education for the prevention of crime would be to make each community realize that it has a part in each anti-social act. Its life for some reason has produced this behavior, either because of a diseased society; or because of an abnormal personality which has not been recognized to be properly treated, so is, therefore, unable to adjust to a normal community life. If this fact namely that the type of society produces the type of crime is widely disseminated we can hope for greater interest, not in the presence or absence of guilt, but in the fundamental causes of the crime and also, in the character of the corrective measures taken. Certainly, the poverty of many of Virginia's so-called criminals is the reason they are placed in that classification. Correction here does not call for punishment, but sociological change. We can hope also from such education that the courts of law will adopt some of the aspects of a clinic which will try to correct the diseased condition found, as well as to protect the rest of society.

Second, from the point of view of education, as well as diagnosis, the psychiatrist would indicate that there are three groups of abnormal personalities that produce a large percentage of all misdemeanors. These are the feeble-minded, the so-called psychopaths or emotional defectives and, third, those people with major mental disease. In a recent survey of mental health in North Carolina it was estimated that there were 27,734 mentally defective white children in the schools of that state. This included only those with an intelligence quotient of seventy

*Presented before the Virginia Conference of Social Workers in Richmond, April 9, 1937.

or below. The same estimate would indicate that Virginia had 22,500 white school children of this nature. These children must be recognized and given special care. Certainly, every school or school system with as many as fifteen feeble-minded should have a special class for the socializing of these individuals. If handled properly the upper grades of the feeble-minded, as well as the mentally handicapped with an intelligence quotient between seventy and eighty, can be made into useful citizens, or at least allowed to live their lives under supervision so that they can escape a criminal record.

The psychopaths or emotional defectives, "the moral idiots" so-called, are another group that develop their anti-social attitude quite young and can be recognized by adequate psychiatric examination. These persons also need special treatment and care. The majority should be removed from society and forced to live in institutions. A great number of chronic alcoholics and drug addicts fall into this group. It is entirely inadequate to commit these persons to State Hospitals for a few weeks or to give them short jail sentences. They should have prolonged psychiatric treatment and their sentences should be indeterminate. Many recidivists are of this character and, in many instances, they, like the chronic alcoholics and the feeble-minded, should pass their lives under supervision. With proper psychiatric supervision of schools these defectives could be diagnosed in early childhood and a great deal of misery prevented.

Finally, it has been shown that anti-social behavior, minor offenses or major atrocities are most frequently committed by the mentally sick while in the incipient stage of their disease, while, after the disorder is fully developed, criminal behavior is rare. The manic-depressive is very irritable and quarrelsome in this preliminary stage and the case of dementia praecox is liable to commit unmotivated crimes of a serious nature. In the early stages these disorders are hard to recognize and it is difficult for untrained persons to realize that they exist. Here again, a medical profession which is psychiatrically minded can offer a great service by diagnosing these cases early so as to lead to a possible cure. The courts also should give more attention to milder forms of mental disease as many of these individuals, while seriously sick, would

never be diagnosed as legally insane under present conditions.

Recently a study of cases of incipient dementia praecox was made in Germany. A group sent to prison was compared with one receiving medical care. Practically all those that went to prison continued on into the chronic form of the disease, while the others either became arrested cases or recovered. This re-emphasizes the criminal behavior of Virginia's lawmakers when they allow so many mentally sick to remain in jail even after their condition has been diagnosed. It has been illegal in New York State for fifty years to put the mentally sick in jail. Why is it legal in Virginia?

Besides these definitely diseased or defective individuals, there are a great many other potential criminals that can be recognized in the early stages and treated with some success by medical men. These are the emotionally unstable, the borderline mental problems, grouped among the neuroses, who are in the main socially maladjusted, but who need the care of social and psychiatric forces. Proper handling of these individuals would aid in the prevention of crime.

Psychiatry then suggests for Virginia, first, a proper recognition in the school of mental and emotional defectives and that facilities for their care be secured; second, that the possibility of incipient mental disease be kept constantly in mind by the courts and the medical profession, and, third, that emotional instability and maladjustments of minor degree be considered seriously by the medical as well as by the legal profession as a causative factor in crime.

The disposal of the criminal after his arrest can hardly be considered prevention, yet the psychiatrists are so often concerned with the trial, the sentence and the course after discharge, that for years they have been working for a better method of handling this problem. The "battle of experts" has brought disgrace to the psychiatric profession; hence no one is more anxious to remove this anachronism than the psychiatrist. Dr. L. V. Briggs of Massachusetts in 1921 formulated the famous Briggs Act which has become the model for similar laws in many states. This Act makes automatic the psychiatric examination before trial by an unbiased commission of any persons indicted for a capital offense or any persons indicted or bound over for trial in the

Superior Court who has been previously convicted of a felony or indicted more than once for any offense. In Colorado whenever there is suspicion of mental disorder the patient enters the State Psychopathic Hospital for a period of observation. The passage of such legislation has been recommended by the Mental Hygiene Committee of the Medical Society of Virginia for the last seven years.

In 1929 a joint committee of the American Bar Association, the American Psychiatric Association and the American Medical Association considered a set of resolutions which were later adopted by the American Bar Association. These were as follows:

1. That there be available to every criminal and juvenile court a psychiatric service to assist the court in the disposition of offenders.

2. That no criminal be sentenced for felony in any case in which the judge has any discretion until there be filed as part of the record a psychiatric report.

3. That there be a psychiatric service available to every penal and correctional institution.

4. That there be a psychiatric report on every criminal before he is released.

5. That there be established in each State a complete system of administrative transfer and parole, and that there be no decision for or against parole or any transfer from one institution to another without psychiatric report.

If Virginia is to have a successful parole system and if the people of Virginia are going to receive former criminals in their midst without prejudice sufficient to injure the value of parole, the resolu-

tions of the American Bar Association should be inculcated into Virginia Law.

The International Prison Congress held in London in 1925 stated that "the trial ought to be divided into two parts; in the first the examination and decision as to guilt should take place; in the second one the punishment should be discussed and fixed. From this part the public and the injured party should be excluded." This seems to be an excellent suggestion, except that the word "punishment" should be changed to "treatment," so that into this second part the judge could summon all the necessary agencies for the proper diagnosis and care of the individual. If to this we could add a really indeterminate sentence dependent on the judgment of a scientific board of review, a great step would be made toward a perfect penal code.

In conclusion and to summarize: psychiatry would attempt to obtain a different point of view toward the criminal. Society must recognize that crime is evidence of disease in itself or in the individual so assume its proper responsibility. The legal profession must become the director of criminal clinics which analyze and treat the causes of crime. Next, psychiatry would urge that proper facilities be supplied for the early diagnosis and subsequent care of the feeble-minded, emotionally defective and the mentally sick. It is hoped that the laws of Virginia will be so changed that the insane will not be housed in jails; that psychiatric examinations of criminals will be made before trial and, finally, that the whole peno-corrective system will employ psychiatric aid in accordance with the resolutions of the American Bar Association.

THE TRUTH—IN DIAGNOSIS AND IN THERAPY.*

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"The saddest sight in life is the individual who doesn't know how to live it." That was the statement of a wise country doctor. I heard him make it the first time I saw him at the first medical meeting

*Remarks made at a symposium of clergymen and physicians at the request of Dr. Ben M. Rosebro (who died December 17, 1936), chairman, in a discussion of some of those conditions that tend to cause marital disharmony. St. James Parish House, Richmond, Virginia, eight P. M., October 23, 1936.

I ever attended. He was small and ugly and neither intelligent-looking nor impressive in physical conformation. But his epigram impressed me, and an intimate acquaintance with him for more than thirty years taught me that profound wisdom was housed within the skull of that family doctor who lived and laboured in the swamps of eastern North Carolina. Has that great truth been stated more succinct-

ly or more powerfully than by Dr. Cyrus Thompson? I know not where.

I have no business here. I have the inclination, of course, as all other mortals have, to try to climb upon a pedestal and to try to play God by seeming to be wise and by telling those whom I think to be foolish how they should order their lives. I know of nothing, indeed, so comforting to my own egotism and so soothing to my soul as trying to play God. Our ears are deaf to the divine injunction: judge not. But we are constantly sitting in judgment, not only upon the conduct of our fellows, but also upon their motives. We say thereby that we can read their hearts. And in hearts we often find badness, we think, more often than virtue. Well, Socrates once took his disciples on a long walk in an effort to enable them to grasp his conception of the meaning of virtue.

But before we can undertake to commune with each other about any problem we must first decide upon the meaning of the terms that we are to use, for it is a risky thing to use language. I know that I do not know what even a problem is, though the world seems today to be filled with them. But I have a vague etymological recollection that a problem may be merely a projected intracranial formulation pitched into the crowd for the double purpose of creating confusion and of enlarging the projector's ego. I know of no better way of trying to impress the multitude with one's intellectuality than by asking, with Websterian solemnity, a question that seems to be profound in its implications. A newspaper man in North Carolina in former and less complex days would occasionally discuss in his editorial columns with light solemnity, when times were dull, such hard nuts as: Why do a rabbit wobble its nose? When do a pup become a dog? In retrospect I think of him as a summertime satirist, just as I think of Alice as a year 'round satirist. I am certain that the immortal account of her varied adventures was never intended for the juveniles.

It is a solemn thing to become too solemn and to create solemnity where it does not belong. But in that way ignorance tries to conceal herself. By such professional pomposity we physicians live—and such lives we live!—and we move and we have our being. What about my brethren of the cloth? I have little doubt that the Walrus and the Carpenter had just left a heavy and a boresome faculty meeting or an assemblage of the clerici or the stated monthly meet-

ing of the local medical society. As they strolled both for forgetfulness and for oxygenation along the boundless expanse of sand is it little wonder that the interrogatory of the Walrus overwhelmed the lachrymal glands of the Carpenter?

But the most important thing about life—and no one of you knows less about it than I—is to live it. I assert this stoutly in spite of any contrary opinion that might be proffered either by the obstetrician, who welcomes us into the world, or by the mortician, who dismisses us from it. They are not akin, though their names are alike, yet they still have too much to do with each other. Were we physicians, all of us, less ignorant and more skillful, the morticians would have the hard life they deserve. I feel no personal hostility towards them, and I expect them to be the last mortals to render me a service. But it is more important to live life than either to make ingress into it or exit from it.

We should encounter difficulty—certainly I should—even in presuming to formulate a conception of that phenomenon called life in words that would be either comprehensible or acceptable to you or to me. I doubt, indeed, if anything worthy of thought can be either defined or understood. A definition is only another unsatisfactory symbol. Our intelligences are small, and by their use we often merely confuse ourselves and bring embarrassment to our friends. But I think that even though life may be undefinable we may look upon conduct, without reference to its quality, as the manifestation of life.

And we are so enormously concerned about behaviour—mostly that of others, and not our own—that we have little time left for thought about anything else. That statement may be wholly true. We may be interested fundamentally only in each other, and the most obvious thing about a human being is not her eyes or her golden hair or her perfect nose or her rounding breasts, but her behaviour. That latter all-embracing term includes, of course, her raiment, or lack of it, and all that she does or doesn't, and how, from the first extra-uterine cry until the sounds of the falling clods and the "dust unto dust" commingle. I feminize the living organism, because we masculines live and labour merely to make the eternal interrogatory possible. For without her we certainly cannot live.

Though our simultaneous questions seemed to become entangled on the wire, the last item that my

celebration carried out of the verbal collision was that Dr. Rosebro would expect me to tell him and you how we may be able to live with her, and with the offspring, and they with their parents and with each other. I fear I failed in my effort to induce him to try to delimit my verbalizations to something simple and circumscribed. But Dr. Rosebro had matrimony on his mind; that I remember distinctly. He wanted to know how we might devise a mechanism by the use of which we might pick out from the cosmic herd those totally unfit to marry at all; and how we might be able to make fit for marriage some of those others not quite so impossible. And I bethought me of the reputed reply of my Lord Verulam, sometimes mistakenly called Lord Bacon, himself a married man of a year. To the young man who sought to find out the optimum age for marriage the world's wisest man solemnly made answer: "A young man not yet, an old man not at all."

The longer I live the more I am inclined to believe that wisdom cannot be verbalized. We see wisdom busily but silently and invisibly at work deep in the soil; in the depths of the sea; in the remote forests, and in the pitchy darkness of night. It guides and preserves and perpetuates by immortal mortality every living thing. But to most of those living objects we deny the possession of that attribute that we call intelligence. Yet the mute and the inarticulate possess some fully-formed wisdom that causes our knowledge to seem to be mere stupidity, and that quality we call instinct. We ourselves are richly endowed with instinctive urges, but most of them we are ashamed of, and against most of them we wage a perpetual and unceasing but losing warfare, through our religion, through our laws, and by means of our educational mechanisms, and through most of those other agencies with which so-called civilization curses or blesses us. Perhaps wisdom is, after all, biologic rather than psychic.

I believe that most crime, so-called, arises out of the conflict betwixt man's unsuccessful effort to subject himself to the demands of civilization, on the one hand, and to the contra urges of instinctive drives, on the other hand. I do not call it the flesh. I call it instinct. It comes to us, most of it, I doubt not, by direct inheritance from ancestors that were making use of it in preserving themselves and their progeny long before the dawn of the first intimations of civilization. We should be as willing to

know our instinctive inheritances, and our emotional qualities, as the medical student must be to know the materialistic structure of the human body. Our instincts are as old as the oldest portions of our bodies, and some portions of our bodies are much older than others. Instinct it is that keeps alive the child until intelligence develops, and in the final years, when intellect has often departed, instinct abides and patiently guards the slowly tumbling personal wreckage. I do not believe that God intends for us to despise any portion of ourselves, for we are His handiwork, and we are interrogatively discouraged from asking: Why hast thou made me thus?

I think we can make a greater contribution to the great cause, whatever it may be, by attempting to understand both ourselves and others as we are, rather than by condemning others and ourselves. Condemnation generally calls neither for intelligence nor for courage, and it is seldom constructive. But we are probably afraid of ourselves—afraid to know ourselves as we are. I live in the constant conviction that the demands society makes upon our capabilities are often too great for our strength and endurance. We have made life too complex. I speak not of physical strength but of emotional and intellectual and moral and spiritual strength and endurance. We are permitting our government to become so complicated that we can neither understand it nor endure it. Thought of government should be our minor and not our major concern.

I assume that life affords most of us the opportunity to attempt to gratify some innate hungers. There are few fundamental hungers. We instinctively crave food and drink and shelter and physical comfort and a home and sexual gratification and progeny and some possessions. The instinctive needs are few, and simple, but if they are not supplied the mischief is to pay. The state that we have created that we call civilization has so extended and increased our needs that the catalogue of them is long and we have become enslaved by our artificial desires. Not infrequently the yearning for many of them is merely fabricated, and in imitation of some neighbor whose mode of life we consciously or unconsciously emulate. Most of us wear ourselves out in keeping up pretenses and in putting on airs. Natural behaviour has become so rare that it seems abnormal, and some phases of perfectly natural be-

haviour would undoubtedly cause the arrest of the individual.

Quantum is often mistaken today for qualis. I think I am certain that the larger the student body is the better the university is thought to be; the bigger the hospital is the more afraid of it Death is thought to be; the more massive and elaborate the church is the more of His time God is supposed to spend in it. The truth of some of these beliefs I doubt. But we do live in a world of concealments. Speech is made use of largely to keep the truth covered up. The value of externalities was never before more emphasized. There is no longer demand for solid mahogany or solid walnut or solid oak. The veneer answers all purposes. We are taught from the development of consciousness to fabricate a front and to attend to outer aspects. Not long ago I discovered that our word personality comes by long descent from the name of the mask worn in their earliest performances by the primitive Romans. Such a mask they called *persona*. Later the term included reference to the actor behind the false-face. We make use of the word personality in differentiating mortals by their immaterial attributes. But we are so uncandid that it is difficult to estimate and to analyze those qualities.

I have not forgotten why we are assembled here. I am mindful that we are concerned about the probable unfitness of certain individuals for the married state. The epileptics, I should say, most of them, had better not marry. Nor should the syphilitic or other venereal victims until thoroughly healed of the disease. The tuberculous, especially if a woman, should seek the advice of a specialist before she becomes a wife. There are many other physical conditions that tend to make marriage a hazardous step.

Man's and woman's being is not all flesh and blood and bone. The emotional structure, though invisible and impalpable and imponderable, is infinitely larger than the physical structure, and much more easily traumatized, and infinitely more complex and sensitive and difficult to live with than the physical body. We are all more or less tyrannized over by our passions and prejudices and hates and fears and we are disturbed and distracted by our doubts and suspicions and anxieties and apprehensions and envies and jealousies and despairs and hopes. The Public Health forces devote all of their ministrations, it seems to me, to the physical body. They do not seem to remember that it is written:

man shall not live by bread alone. The immaterial attributes must be wholesomely nourished. I should infinitely prefer for myself a sound emotional structure rather than a sound physical body, if I had to make a choice. The intellects of individuals seldom clash. Most of us have too little sense to make an intellectual collision possible. Physical combats betwixt human beings are becoming rarer, except on the field of battle, even betwixt wives and husbands. Only fools fight physically, either individually or in warfare. But emotional collisions and catastrophes between individuals and betwixt groups are of increasing frequency. The increase in transportation and communication facilities makes such emotional clashes more frequent. We can be insulted, for instance, by a letter or a telegram or a telephone message or a radio pronouncement by an individual out of sight and far out of physical reach. And the printed page spreads the world's doings before us several times daily. Our emotions are constantly harried and harassed. Through our own emotional mechanism we receive and by it we transmit. But who is competent to examine and to estimate the emotional endurance-possibilities of the about-to-be-married youngsters? I should dislike, indeed, to be burdened with the responsibility of having to say nay to them. But if marriage goes upon the rocks it is because the pair become emotionally and spiritually worn out with each other.

Good emotions are more productive of comfort and happiness than good sense is. Real intelligence is so rare that one might feel uncomfortably self-conscious if endowed with it. But through our emotions we come into contact with the emotions of others. Often, of course, we are in emotional communion with the dead—that is, if the attributes of a mortal ever die. Homer and Achilles and Hector and Andromache and Penelope and Moses and David and Socrates and Jesus are as much alive to me as Dickens and O. Henry and Jiggs and Andrew Gump and Emerson and Shakespeare and Eugene Field and Montaigne and Lippman and Douglas Freeman and Patrick Henry and Poe and The President and Al Smith and Mayor Bright. It may be merely transformation anyway, rather than death.

My own notion is that the chief cause of discord and trouble in the home and outside of it and in the individual is lack of honesty. I do not mean the sort of dishonesty that causes one to steal or to

murder. I am speaking of honesty with one's self. Perhaps that may be what intellectual honesty is. But one may be honest with one's self without being intellectual. There is no more self-honesty, of course, save in little children and in some young people. None of us older people is intellectually honest. None of us has any interest in such honesty. We are only hoping that we may be able to hold out till the end, and that not even the undertaker may find us out as he enshrouds us. What minister preaches his own truth? What physician tells the truth either to himself or to his patient? What candidate for office is interested either in knowing the truth or in disseminating it? And the word candidate once meant snowy white, and pure, didn't it?

I think I can believe that most marriages would last if the two members of the pair would firmly resolve from the beginning merely to try to be honest with each other and with others and not to expect too much of each other. And the people of the whole world would eventually become stable and busy if they would lay aside pretense and become simple and honest. But that is asking that we be quite otherwise than as we now are. I have never known greatness in a mortal without associated simplicity. Affectation is always a manifestation of fear, and fear generally means ignorance. We do not fear

what we understand. The most eminent and the most respected citizen in Mark Twain's Heaven had been, you remember, a blacksmith in east Tennessee. Napoleon lived in Heaven in isolated obscurity. I wish we could come down from our high horses and stop putting on airs and being puffed up and snooty and unnatural. It tires me out to put on airs myself and it wearies my bones. I should like to have done with it. Would you?

I think such civilization as we have is mounted on wheels and is featured chiefly by movement and by pretense and affectations; but I think we should get down and walk a while for the benefit of our legs, and lay aside our braggadocios for the good of our souls. I have an idea that God is plain and simple and honest, and that if we are not that way we cannot be comfortable with Him. Hell must be the only place for those unfit for Heaven. The promise that we shall ultimately know the truth is not absolute,—*kai gnosesthe*—but it is conditioned upon our willingness to continue in His word. If we can ever become sensible again, and become interested in the development of character, then, I think, we shall find the world to be all right. And then the officials of the divorce courts can take a long holiday, and then most of the psychiatrists and many other physicians, too, can go into retirement.

ROENTGEN RAY DIAGNOSIS AND TREATMENT OF OSTEITIS FIBROSA CYSTICA.*

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It is our purpose in this paper to limit the discussion to solitary bone cysts and not to include the multiple forms of osteitis fibrosa. Due to present day custom of making frequent X-ray examinations these solitary cysts are found to be much more common than formerly reported, probably many of them not giving symptoms sufficiently impressive to call for an examination.

The etiology of solitary bone cyst is unknown. There is little evidence either from the microscopical characteristics of the lesion or from studies made from cultures to indicate that they are due to infection. Consistently normal blood phosphorus and

calcium findings oppose the view that parathyroid dysfunction may be a factor. So far no one has offered a satisfactory explanation for the occurrence of this lesion.

The majority of solitary bone cysts occur between the ages of ten and fifteen years. The average duration is approximately two and one-half years. About 20 per cent exist for ten years or longer. A lesion which has probably arisen in childhood may be accidentally discovered in later life.

The majority of bone cysts are found in one of three locations, the upper end of the shaft of the femur, humerus or tibia.

Briefly, the pathological process consists in a central destruction of the cortex by a growth of

*Read before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, October 12-14, 1937.

fibrous tissue with little new bone formation and little expansion of the shaft. A variable amount of ossification takes place in this fibrous tissue, and this apparently originates from the cortical region of the shaft. The mass of fibrous tissue frequently contains cystic spaces. Microscopically, these cyst



Fig. 1.—April 18, 1935, showing cyst of shaft of right tibia.

walls are seen to consist of spindle cells and fibroblasts with a considerable amount of clear intercellular substance. Osteoblasts and new bone formation also make up the picture. This process is taking place when the proliferating power of the bone cell is near its height and the whole picture is more nearly one of repair than of a destructive



Fig. 2.—April 22, 1935. Left leg normal.

process. This is also evidenced by the fact that the lesion tends to be self-limited. The persistence of the cyst is due to inability of natural process to collapse its wall. When this is done either by pathological fracture or operative procedure the lesion heals.

A solitary bone cyst may give no symptoms or at least none of consequence. Pain, usually slight,

is found in some cases. Slight expansion of the shaft of the bone may occasionally be noted. The finding which most frequently leads to an examination and diagnosis is a pathological fracture. About 45 per cent of the cases of osteitis fibrosa are brought in on account of fracture. Deformity of the bone without actual fracture may also bring the patient to the physician.

An X-ray examination of a solitary bone cyst shows central circumscribed destruction of medullary bone usually near but not invading the epiphysis. There is thinning with slight expansion of the cortex without perforation. This intact bone shell is important in placing the lesion in the benign class. Shadows of trabeculated bone may be made out in the lesion. Among the lesions to be con-



Fig. 3.—October 23, 1935. Right leg, four months after completion of Roentgen ray treatment. Beginning ossification is noted.

sidered when making a differential diagnosis we find giant cell tumor, gumma, chondromata, and multiple fibrosa cystica.

A considerable amount of evidence has been brought out to indicate a pathological relationship between giant cell tumor and osteitis fibrosa. Some workers are classifying an intermediary group giving findings characteristic of both lesions. It is probable that if we attempt to draw a definite line between the two, border-line cases will occur which will be difficult to classify. It is with the typical bone cyst that we are concerned in this discussion and this can be differentiated from giant cell tumor with a fair degree of accuracy by the age of the patient, location of the lesion and X-ray findings. Solitary bone cysts occur most frequently in adolescence, giant cell tumor later in life. The cysts are located near the epiphysis but do not invade it,

while the giant cell tumor is usually in the epiphysis. The X-ray shows the giant cell lesion to be much more destructive in character and the irregularly expanded bony shell is often perforated.

Gumma will seldom give marked difficulty in differential diagnosis; periosteal involvement with appropriate laboratory tests for syphilis will usually make the diagnosis clear.

Chondromata are more frequently found in the small bones and are more finely multiloculated.

The pathological process and X-ray findings in solitary bone cyst are identical with those found in Von Recklinghausen's disease if a single lesion only is considered, but the multiplicity of lesions in the latter will easily differentiate the two. In addition

was some thinning with slight expansion of the cortex without any evidence of perforation. No fracture lines were noted. Shadows indicating trabeculated bone formation were noted in the area of decreased density. Examinations of other long bones and chest were negative. A diagnosis of solitary bone cyst was made, and Roentgen ray therapy advised. No other treatment was used except that the patient was placed on crutches to decrease the possibility of pathological fracture and an appropriate dietary régime including cod liver oil, was given.

The Roentgen ray therapy was applied locally. The parathyroids were not treated as there was no evidence of hyperparathyroidism. The treatments



Fig. 4.—December 29, 1936. Right leg, eighteen months after treatment. Cyst almost completely healed.



Fig. 5.—July 17, 1937. Right leg, two years after treatment. Lesion healed.

to this the normal blood phosphorus and calcium in the case of solitary bone cysts will make the diagnosis more certain. The lesion under consideration also gives none of the symptoms frequently found in hyperparathyroidism, such as polyuria, thirst, renal colic, etc.

The Roentgen ray treatment of bone cysts will be discussed with the case report which follows:

M. K., a white high school girl, fourteen years old, was referred for X-ray examination April 18, 1935, on account of pain and slight swelling in the region of the upper right leg. Except for the local lesion physical examination and laboratory findings were essentially negative. There was nothing of significance either in the family or personal history.

An X-ray examination showed an oblong area of reduction in density in the shaft of the right tibia about three inches from the upper end. There

consisted of three series of two treatments each, the series being given at monthly intervals. At each treatment 175r units with a wave length of 0.150 Au were given.

X-ray examinations of the involved bone have been made at intervals over a period of two years and slides made from these will be used to show evidence of ossification of the cyst. It was three months after beginning treatment that definite evidence of ossification could be demonstrated by X-ray, but symptomatic improvement, as evidenced by relief of pain, began considerably earlier. Later plates, made one and two years after treatment, show practically complete ossification of the lesion, and from every standpoint the patient has made a satisfactory recovery.

The possibility of spontaneous healing cannot be entirely ruled out, but the very early relief of pain and relatively rapid recalcification of the lesion after Roentgen-ray therapy would seem to indicate

that this method of treatment was definitely helpful in this case. Experimental work has fairly definitely proven that moderate amounts of X-ray stimulate and accelerate ossification. Relatively short wave lengths were used because it is felt that the desired results are best obtained with this quality of rays.

In this case no pathological fracture nor operative procedure could have played a part in healing by crushing the cyst wall.

DISCUSSION

DR. J. T. MCKINNEY, Roanoke: I think Dr. Gilmer is to be congratulated on the excellent results he has obtained in the treatment of this fourteen-year-old child with solitary bone cyst. You will see he has limited his discussion particularly to solitary bone cysts. As brought out in his paper, this usually occurs in the first two decades of life, more particularly in the shafts of the femur, humerus and tibia. It is of great interest to surgeons to know that probably 50 per cent of solitary bone cysts can be cured by irradiation without operation. I have a similar case under observation which was referred by Dr. L. Clarence Cohn, of Baltimore. This patient, a young girl seventeen years of age, was seen by Drs. Burnham and Neal, of Baltimore, in 1934, at which time a diagnosis of solitary bone cyst in the shaft of the tibia was made. She was given two X-ray therapy treatments and since no ossification or deposition of calcium was noted at the end of a year, operation was advised. Dr. Cohn did a cauterization and curettage and placed a number of bone chips in the cystic area. In 1936 this patient had a fall and fractured the tibia through the cyst wall. The fracture healed and complete recalcification of the bone chips and cystic area has taken place.

Lantern slides of giant cell tumors of the scapula and upper end of the tibia were shown, with improvement following irradiation. In selective cases irradiation will give good results and should be tried before resorting to surgery.

DR. J. SHELTON HORSLEY, Richmond: The paper presented by Dr. Gilmer and the discussion by Dr. McKinney are both interesting.

The diagnosis of bone tumors is often difficult and cannot be definitely made, at least in the early stages, without competent X-ray study. Probably the best work that the late Dr. Joseph Bloodgood did was to differentiate giant cell tumor from sarcoma and to show that it is not malignant. It is now termed giant cell *tumor*. Before he called attention to this condition many limbs were sacrificed by amputation. He showed that this tumor could be cured by local treatment, curettement and packing. Heavy X-ray

treatment given in competent hands also may cure many of these cases. The first applications are usually followed by intense reaction, and later bone forms. Not all of them, however, as Dr. McKinney has said, can be cured by such means.

Very occasionally a tumor that is thought to be a giant cell tumor of the bone proves to be malignant and gives metastases, so this feature should be borne in mind, though it occurs only in exceptional cases.

The late Dr. Wm. B. Coley was a great advocate of the toxins of erysipelas and bacillus prodigiosus (called Coley's serum or toxin) in sarcoma, particularly in sarcoma of the bone. Dr. Bradley Coley, the son of Dr. Wm. B. Coley, believes Coley's toxin is not efficient in osteogenic sarcoma, but is probably helpful in the Ewing type of sarcoma or endothelioma of the bone, and even then it should be accompanied or followed by X-ray treatment and probably by resection of the lesion.

We are much indebted to these two gentlemen for bringing the subject of osteitis fibrosa cystica and giant cell tumor to our attention, for they are closely allied to the malignant type of bone tumors from which they must be differentiated in the early stage of the disease if cure is to be effected.

DR. GEORGE DUNCAN, Norfolk: Solitary bone cysts differ from osteitis fibrosa cystica in that the former are due to local bone reaction and the latter is due to a glandular and metabolic disturbance. In osteitis fibrosa cystica one usually finds the symptoms of hyperparathyroidism and a resulting imbalance between the blood calcium and phosphorus, while in cases of solitary bone cysts no disturbance in the blood chemistry is found.

Solitary bone cysts like the one demonstrated this morning is a benign medullary tumor and is amenable to deep X-ray therapy, as Dr. Gilmer has shown in this patient. However, the healing of this type of lesion by X-ray therapy usually requires many months or even one to two years. Also, if the cortex of the bone over the lesion has so expanded that it is very thin a spontaneous fracture may occur. While it is true that a fracture through the lesion may hasten its healing, the general practice now is to curette the cyst cavity and pack it with small bone chips. This procedure has met with better success in healing these lesions and materially shortens the period of repair.

DR. GILMER, closing the discussion: I wish to thank the members for their discussion. There was no evidence of hyperparathyroidism in the case reported. This possibility must always be considered when dealing with bone cysts.

An effort was made to bring out the fact that giant cells are frequently found in bone cysts which are not true giant cell tumors.

EARLY DIAGNOSIS OF GASTRIC CANCER.*

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and

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Cancer of the stomach is responsible for about one-third of all deaths annually from cancer in the male. It is estimated that in the United States 38,000 persons die each year from gastric cancer. It is an appalling fact that approximately 50 per cent of all these cases are far advanced, and therefore inoperable, when first seen by the clinician. It is stated by some that 50 per cent are so far advanced that even an exploratory operation is contra-indicated, but on this question opinion varies widely, as many surgeons believe that all cases without demonstrable metastases should be explored unless complicating diseases render surgery too hazardous. Granting that only 50 per cent of all cases warrant exploration, it is generally agreed that, of this number, the growth can be removed in only one-half. Thus it is seen that in only 25 per cent of the patients with gastric carcinoma is it possible even to attempt a cure. Of this small group many suffer recurrences locally, and in others metastases had occurred which were too early to be discovered at the time of operation, but these later caused death. Consequently, cured cases of carcinoma of the stomach are almost unknown in the practice of the average physician, and one analyzing his experience with the disease, without at the same time considering the reasons for the high mortality observed, naturally assumes an attitude depressingly pessimistic. This is the reason for the often heard statement by laity and physicians alike: "Why operate, he will die anyway."

In spite of the appalling situation which now exists with regard to stomach cancer, it is conceded by those familiar with the diagnosis and treatment of malignant disease that early cancer is curable in the great majority of cases, and that this fact applies as well to gastric cancer as to cancer elsewhere. The problem then in cancer of the stomach, just as truly as with tumors elsewhere, is one of early diagnosis. It is also true that, excluding the skin, and perhaps those body cavities accessible

to direct vision, cancer of the stomach is in the great majority of cases more easily diagnosed in its early stages than is cancer elsewhere. Roentgen apparatus and technique have been perfected to the extent that the experienced radiologist is able to discover 98 per cent of organic gastric lesions, and in most of these to differentiate between the benign and the malignant. In the doubtful cases, repeated observations will usually reveal the true nature of the lesion.

It thus becomes obvious that the only major problem involved in the early diagnosis is one of getting the patient to submit to the proper examinations at the time the first warning symptom appears. This problem remains and will continue to remain with the family physician. He is the one from whom the patient first seeks advice, and his advice will be followed for the time being. Therefore, a patient, particularly if over thirty-five years of age, who complains of gastric distress, no matter how trivial his symptoms may appear, places a great responsibility on his physician. His advice at this time will determine whether a diagnosis will be made early and a cure be made possible, or whether the early cancer will be permitted to progress to an inoperable stage. If he treats the symptoms lightly and prescribes treatment for "indigestion," one more life is forfeited, and added to the already huge mortality of malignant diseases. The patient may eventually seek advice elsewhere and the proper diagnosis may be made, but too late to even offer a hope of cure.

Unfortunately, the generally accepted clinical criteria for the diagnosis of stomach cancer are the late manifestations of the disease. Both the public and medical profession would profit if these criteria could be eliminated from every mind and from every textbook. If, instead, the public were educated to seek advice from the family physician when the first warning symptom appears, and if the physician would at once seek consultation with those physicians equipped for the proper studies, he would soon add to his experience the delightful knowledge of having made an early diagnosis of gastric cancer, thereby having made possible a cure—an experience too in-

*Read before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, October 12-14, 1937.

frequently enjoyed by all of us. In the final analysis, such a happy situation will be made possible only after both the public and medical profession have become "cancer conscious". The medical profession itself must first become so. This accomplished, it will be easy to educate a public already seeking knowledge of the first warning symptoms of cancer in various body locations.

The highest incidence of cancer of the stomach occurs in the fifth and sixth decades of life, and the disease is almost twice as common in males as in females. It is important, however, to remember that it may occur at any age. It is a safe rule to follow that any patient, especially if over thirty years of age, who develops any gastric symptoms should be suspected of having cancer until otherwise proven. Those patients who have had gastric symptoms over a period of years, but complain of symptoms not before experienced, should also become suspects.

It is generally believed by a large majority of the medical profession that gastric symptoms relieved by medical treatment are not caused by cancer. This one false impression has been responsible for the failure to diagnose early cancer in numerous instances. As stated by Horsley,¹ the symptoms of early cancer of the stomach almost always improve under medical treatment, and, as he says, any improvement noted under such treatment should not cause a delay in the search for cancer.

Unfortunately, early cancer of the stomach presents no typical syndrome. Lahey, Swinton, and Peelen,² in an analysis of 195 cases observed over a seven-year period at the Lahey Clinic, reported the earliest symptoms as follows: Indigestion 70 per cent, anorexia 42 per cent, pain 30 per cent, weight loss 25 per cent, vomiting 28 per cent, dysphagia 4 per cent, weakness 13 per cent, hemorrhage 4 per cent, mass in abdomen 1.5 per cent. The average duration of symptoms in their patients who at operation presented an operable lesion was 8.1 months. From these figures it can be seen that even the operable cases could have been diagnosed much earlier had they been properly examined when symptoms appeared eight months before.

The early symptoms of gastric cancer will vary in different individuals, but if one always bears in mind that any one, or any combination, of the above symptoms in an individual over thirty years of age should lead him to suspect cancer until otherwise

proven, and proceeds accordingly, he will have the satisfaction of knowing he is helping solve the problem of gastric malignancy.

It is a sad commentary on our profession that the great majority of patients, when the diagnosis is made, have had symptoms for months, and in many instances have been treated for "indigestion" during the interim. It would hardly be an exaggeration to state that at present nearly all of us whose practice takes us into the field of gastroenterology have one or more patients over thirty years of age with gastric symptoms who have not yet had a roentgen study of the gastro-intestinal tract. While it is true that many of these patients do not have, and probably will never have cancer, it is also true that we will never be able materially to lower the mortality of cancer of the stomach unless all these patients are subjected to a thorough examination, including roentgen study. The saving of a few of the group will well compensate for the additional trouble and expense borne by the others.

It is unfortunate that as yet we have no serologic, biologic or other laboratory aids for the diagnosis of early cancer. The familiar gastric analysis probably does more harm than good in that it often creates a false sense of security when free hydrochloric acid is present. One forgets that the early carcinoma of the stomach does not destroy the acid secreting cells even though it arises in their midst, and that a carcinoma of the cardia may become far advanced without disturbing any of these cells. Such are the frequent observations of those who see many cases of gastric cancer. Therefore, absence of free hydrochloric acid, together with the other chemical changes expected in carcinoma, must also be placed in the category of the late signs of cancer of the stomach, and the value of the gastric analysis in the early detection is almost nil. For this reason, in any suspected cancer of the stomach roentgen examination should precede a study of the gastric contents unless one resolves faithfully not to permit the findings of the gastric analysis to influence his first impression.

When every physician will advise his patient, at the first suggestion of gastric distress, to have a thorough examination, including above all roentgen study of the stomach, and when the early syndrome of stomach cancer is popularized, and the public made "stomach conscious," we will have progressed a long way toward the reduction of cancer mortality.

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DISCUSSION

DR. J. SHELTON HORSLEY, Richmond: This paper on the early diagnosis of gastric cancer is extremely important. The mortality rate from cancer of the stomach is more than twice that of appendicitis. And yet cancer of the stomach can be cured in many instances if the diagnosis is made sufficiently early. Like appendicitis the only proper therapy is operation. Doctors Clarkson and Barker have emphasized this feature. The fact that each year there are about 38,000 deaths from gastric cancer should cause us to put forth our best effort to diminish this mortality rate. If even a few persons are killed by an airplane accident or the sinking of a ship it receives front-page notice in the newspapers, but the fact that this enormous number of individuals die every year from cancer of the stomach attracts but little attention.

One of the chief obstacles to the early diagnosis of cancer of the gastro-intestinal tract is friendship. Because the doctor knows the patient well it is frequently difficult for him to believe that there may be something more serious to the stomach trouble or indigestion than merely a local functional disturbance.

The treatment for cancer of the gastro-intestinal tract is excision of the lesion, and if this can be done in the early stage of the disease the chances for cure are excellent.

The chances of a permanent recovery, however, decrease with the advance of the disease. If physicians would be cancer-minded and consider every patient over thirty years of age, particularly a male patient, whom he treats for indigestion or stomach trouble without being able to demonstrate the cause of the indigestion, as a potential cancer case, the mortality from this disease will be greatly reduced. If, of course, the cause of a stomach complaint can be found and corrected, this ends the matter, but if it cannot be fully determined after a few weeks of investigation and treatment the patient should be referred to a competent roentgenologist for full examination of the gastro-intestinal tract. If the lesion is in the duodenum the patient may be treated indefinitely by medical means, unless there is obstruction, perforation or hemorrhage, but if the lesion is in the stomach and is suspicious of cancer operation should be done as soon as possible. If it appears to be a peptic ulcer the patient can be safely treated medically for a few weeks and then should be checked up again both clinically and roentgenologically. If the progress is not satisfactory it is much safer to do a partial gastrectomy.

It is only by bearing these facts in mind that we can cut down the mortality rate from cancer of the stomach. Partial gastrectomy in competent hands in early cancer has a very low mortality rate, and should not be confused with operations in the late stage of the disease.

This paper is not only timely, but it is courageous, because it calls attention in a very emphatic way to the fact that many patients with cancer of the stomach are permitted to go to an inoperable stage when a more careful examination by one who is cancer-minded could direct the patient to a roentgenologic study and probably detect the disease in the early stages, when operation would be curative.

PLACENTA PRAEVIA.*

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Dr. Rudolph Holmes, who is responsible for the name "ablatio placenta," tells of discussing the treatment of that condition with a young doctor who had decided views on the subject. He told Dr. Holmes that his experience led him to believe that all cases should be treated by Cesarean section. "And what has been your experience?" asked Dr. Holmes. "None" was the reply. As my views on the treatment of placenta praevia are at a variance with the commonly accepted ones, I hasten to qualify, as our lawyer friends say. My experience consists of 203 cases which occurred in 7,884 de-

liveries. This is a high incidence rate, which is explained in part by the fact that when I was in charge of the out-patient service of the Medical College of Virginia I kept personal notes only of the complicated cases, and in part by the presence of a number of cases seen in consultation.

The ancients called placenta praevia unavoidable hemorrhage, not a bad name, for hemorrhage is its only symptom and its chief danger. If time permitted it would be interesting to trace the changing views in regard to this condition. Portal (died in 1703) showed that the placenta could be attached over the cervix. Before his time it was believed that

*Read at Tennessee Valley Medical Association and Post-Graduate Assembly, June 25, 1937.

placenta praevia resulted from a prolapse of a normally attached placenta. In the nineteenth Century it was the common practice to deliver the placenta manually and leave the baby to its fate. Such treatment was said to have been very successful in controlling the hemorrhage.

To practical obstetricians the chief interest in the condition centers in its management. Prompt recognition is essential. Hemorrhage in the latter months of pregnancy should be considered to be from a placenta praevia until the presence of the placenta at or over the internal os is excluded. The hemorrhage comes without warning and is not accompanied by pain. The bleeding in threatened miscarriage is accompanied by pain and that of the ablatio placentae is usually accompanied by signs of toxemia and tenderness and a board like rigidity of the uterus. The diagnosis rests upon feeling the placenta, but this examination should not be undertaken until you have everything in readiness to cope with the situation should the bleeding start again. Even a rectal examination may excite a profuse hemorrhage. The immediate treatment should consist of elevation of the foot of the bed and a dose of morphin hypodermically. The vaginal pack that one often sees when the patient enters the hospital is worse than useless. It can not stop the bleeding. It may even make the bleeding worse and it certainly increases the chances of infection. If a hospital is available it is better to take the patient there soon after the initial hemorrhage.

On admission to the hospital the patient's blood should be typed and a donor located. This keeps the friends and relatives occupied and you may need the blood. The patient should be prepared for delivery and a No. 5 Voorhees' bag should be sterile, rolled up, and clamped with a bag clamp before one makes a vaginal examination. With those who prefer to do a Cesarean section, I have no quarrel. I believe it has its place, especially with an elderly gravida who is willing to run a little extra risk in order to increase her chances of having a live baby. The classification into central, partial and marginal, serves no useful purpose in deciding the best mode of treatment. In the first place is impossible to tell whether the placenta is centrally implanted until the cervix is fully dilated. In the second place the very idea of a central placenta praevia frightens a great many

doctors and they do something in desperation that they probably would not do otherwise. Personally, as we shall see later, I have had more trouble with the marginal type than I have had with the central. Of my five fatal cases, four were marginal.

If upon vaginal examination the placenta is felt one should proceed with the type of delivery that best suits the case, due consideration being given to the environment of the patient and the skill and training of the operator. In the exceptional case when the baby is at or near the age of viability one might wait several weeks, provided the patient is willing to run the risk of having an emergency operation under more unfavorable conditions. My last case was of such a nature, a thirty-eight-year-old multipara, who was due by Naegele's rule on June 22nd. At the sixth month she had a little bleeding. She came into the hospital on March 6th and examination showed an uneffaced cervix that admitted one finger. I was unable to feel the placenta and I accordingly sent her home. She bled slightly several times in April. On May 7th she had a painless hemorrhage and lost about a pint of blood. She again entered the hospital. This time I was able to introduce my finger higher into the lower uterine segment and could feel the edge of the placenta. The patient elected bed rest in the hospital. Three weeks later the cervix had thinned out and was about 5 cm. dilated. The membranes were ruptured. She promptly went into labor and three hours later had a boy that weighed 5 lbs., $8\frac{3}{4}$ ounces. The patient left the hospital with a live baby on June 7th.

The type of delivery that I have used in my 203 cases is shown in the accompanying table. The cases fall into three groups—those in which labor was induced by rupturing the membranes, the bag cases, and those in which labor started spontaneously and continued without any first stage operative interference. There were sixty-four cases in this group, and twenty-three of these delivered spontaneously. Two were delivered with low forceps, one with mid-forceps, six by breech extraction, eight by Braxton-Hicks version, eighteen by version and extraction, and six by Cesarean section. This table illustrates the error in treating statistically small groups of cases. The fatal case in the Cesarean section group was practically a postmortem section, done in the interest of the child. I would like, however, to call

your attention to the fact that in the six Cesarean section cases three babies were lost. This only emphasizes that at best the prognosis for the baby in placenta praevia is poor. In the spontaneous group two mothers died and twenty-four babies, a mortality of 3.1 per cent and 37.5 per cent respectively.

Both sets of twins fell in the bag group, so that there were 115 mothers and 117 babies to be considered. This group also included seven cases in which rupturing of the membranes failed. Three mothers were lost, a mortality of 2.6 per cent, and forty-eight babies, a mortality of 41 per cent.

The last group in the table, twenty-two cases apparently gave the best results, no maternal death and a fetal mortality of 21 per cent. However, in seven instances rupturing the membranes failed to induce labor and a bag had to be used. One was a fatal case. If these cases be included the maternal mortality for this group would be 3.2 per cent and the fetal mortality would be 19.3 per cent. As means of inducing labor, rupturing the membranes works less well than in any other class of patients. In my hands it failed in over 22 per cent, whereas ordinarily it fails in less than one per cent. The explanation is that the presence of the placenta in the lower segment prevents the presenting part from making satisfactory pressure. The same thing explains why extra-ovular placement of the bag is superior to the intra-ovular. When the bag is placed between the cervix and the placenta, labor starts more promptly and dilatation proceeds more rapidly. The idea that the expansion of the bag in that position would cause greater hemorrhage is not borne out clinically. A number of years ago a patient demonstrated that—at least to my satisfaction. This patient was thirty-two years old and had had one previous pregnancy that had ended in abortion at four months. On account of her having a funnel pelvis I advised induction of labor at the thirty-eighth week. Accordingly she entered the Johnston-Willis Hospital May 26, 1923. The cervix was noted as being unusually soft. A No. 5 Voorhees' bag was introduced. The patient felt a little faint and lost about one-half ounce of blood as I was inflating the bag. This was the first bleeding that she had had. The bag was weighted. In six hours and forty minutes the bag was out of the cervix. It was deflated and removed. The cervix was fully dilated and was entirely covered over by placenta. I intro-

duced my hand to one side until I had passed the edge of the placenta, ruptured the membranes, and did an easy version and extraction. The total amount of blood lost, including that of the third stage was 300 c. c. The baby, a seven pound girl, needed no resuscitation. The puerperium was uneventful and both left the hospital in good condition.

I have since had a number of central praevias that I have treated in this way—with scarcely any greater loss of blood than in a normal case. The only difficulty is that one must remain with the patient so as to deliver her as soon as the cervix is dilated. Of the 115 bag cases, ninety-eight were extraovular placements. The labor in these cases lasted from two to seventy-two hours, with an average of 11.9 hours. Seventeen were intra-ovular placements, and labor in these lasted from four to sixty hours, with an average of 22.1 hours.

FATAL CASES

Case 1.—Mrs. P. W. K., a mother of three children, thirty-two years old, was brought into Johnston-Willis hospital in an ambulance, October 3, 1923. About a month previously she had had a little bleeding like a threatened abortion. On September 25th she had had a severe hemorrhage and had been oozing ever since. Her blood pressure was 125/80. The uterus was hard and board-like. The fetal heart tones were feebly heard. A No. 5 Voorhees' bag was placed and the bag was weighted. The husband refused to be typed, and before a suitable donor could be found the bag was expelled. The patient was given 30 cc. of 2% novocaine solution into the sacral canal. This failed to produce anesthesia, and the patient was given ether. An easy version and extraction was done. The third stage was uneventful. Estimated blood loss was 200 cc. Shortly afterwards the patient became ashy with blue lips and feeble pulse. In spite of stimulation the pulse disappeared at the wrist and finally the heart ceased to beat, although the respiration continued for some time. The baby, a girl, made an uneventful recovery. Had this patient been given a blood transfusion, the outcome probably would have been different.

Case 2.—This patient, a secundipara of twenty-two years, was seen in consultation shortly before she died. The following history was obtained: When the patient was seven months pregnant she had a ter-

rible hemorrhage, losing more than two quarts of blood. Her doctor brought her into the Memorial Hospital. When the bleeding stopped and he was unable to feel any placenta in the cervix, he let her go home. Fifty-five days later she began to bleed a little. This time the bleeding was accompanied by labor pains. He again brought her into the hospital and when the cervix was fully dilated he delivered her by version and extraction. The edge of the placenta was felt at the uterine os. The mother and the baby did nicely for four days when the mother had a chill and a temperature of 104. He gave her one-half grain of bichloride of mercury intravenously. The temperature fell to 101 but again rose to 104. When I saw her she was comatose. She died before a report was gotten on the blood culture.

Case 3.—The patient was the mother of eight or ten children all of whom had been delivered by midwives. She was seen in consultation at the Sheltering Arms Hospital, having entered the hospital in labor. After several hours the pains stopped and she began to bleed. Her doctor packed her but the packing did not stop the bleeding. When I saw her no pulse could be felt at the wrist and her systolic blood pressure which was 140 on admission had dropped to 60. A thin stream of pinkish blood was coming through the packing. Dr. LaRoque did a section under infiltration anesthesia. The only blood seen at the operation was free in the lower uterine segment. The baby weighed fourteen pounds. Its heart was beating feebly, but he could not be resuscitated. The mother died on the table. The placenta was a praevia, but its variety was not noted.

Case 4.—Mrs. J. E. P., a thirty-year-old primigravida, entered the Johnston-Willis Hospital, April 11, 1931, on account of albuminuria and a rising blood pressure. Her expected date of confinement was May 1st. Blood pressure on admission was 160/100. The cervix was effaced but undilated. It was easily dilated with the finger and a No. 5 bag was introduced. The bag was weighted. The patient failed to go into labor and the next day the bag was removed. Examination at that time revealed the edge of the placenta. The fetal heart tones were good. On April 15th the patient went to the toilet (against orders) and while she was on her feet the cord prolapsed. The cord was pulsating. The cord was

cleaned with mercurochrome and put back into the uterus. As the cervix was only one finger dilated a No. 5 bag was placed. The uterus was very inactive and the cervix required sixteen hours to dilate. The bag was removed without deflation and a version and extraction was done. The baby, a 53 cm. long male, was macerated. The mother's temperature was 106 before delivery, but dropped to normal and remained so the rest of the delivery day. It was 100 on the second and third days and then rose to 103. She developed hiccough, dilatation of the stomach and finally a parotitis before she died on May 3rd. This case represents what our Philadelphia friends would call errors of judgment. In the first place, the bag should not have been removed; in the second place, the patient should not have been allowed out of bed; and, in the third place, the cord should not have been replaced within the uterus.

Case 5.—A thirty-two-year-old primigravida was admitted to the Johnston-Willis Hospital, September 7, 1935. The only thing noted on her preliminary examination was that she was over-weight. Her systolic blood pressure was constantly low, varying from 100 to 110. She was due on September 7th. On admission the cervix admitted the tip of the finger and was one-fourth inch thick. The membranes were ruptured and the patient was given castor oil (1 ounce) and quinine (grs.5). The patient bled a little all night. She was given six doses of pituitrin (2 minims each) hypodermically but had no pains. After eighteen hours a second vaginal examination was done. The cervix admitted one finger but was so high that I was unable to feel within the uterine cavity. A No. 5 bag was introduced. Within a few minutes the patient had a slight convulsion, became blue and the pulse could not be felt. Her blood pressure was 80. A warm blanket was applied and she soon recovered. At this time she was seen by Dr. VanderHoof in consultation. Her blood pressure had risen to 132/80. He was unable to account for her attack but did not consider her condition alarming. The patient began to bleed as the cervix dilated. The bag was soon out of the cervix and was removed without deflation. The patient was given a little ether. There was a marginal placenta praevia and a version was done. The patient stopped breathing. The anesthetic was stopped and artificial respiration instituted. The

patient responded promptly. The extraction was then completed without any further anesthetic and without great difficulty. The placenta was expressed. The estimated blood loss was 600 to 700 cc. The vagina was packed tightly with sterile gauze. The patient was conscious and complained of not being able to breathe. Her veins were collapsed and empty and had to be opened with a scalpel before intravenous glucose solution could be started. She died forty-five minutes after delivery before much glucose solution had run into the veins. Dr. Vander-Hoof and I discussed this case at length and can offer no satisfactory explanation. Each of the attacks of syncope was associated with manipulation about the cervix. From the standpoint of placenta praevia, it is an example of the unresponsiveness of the uterus to the rupture of the membranes when there is a placenta praevia.

SUMMARY

A series of 203 cases of placenta praevia is analyzed. The gross maternal death rate was 2.46 per cent. The gross fetal death rate was 32.68 per cent. The classification into central, partial and marginal placenta praevia serves no useful purpose from the standpoint of treatment. The marginal type may give one a false feeling of security and induce him to adopt an inadequate method of treatment. On the other hand, a central placenta may cause undue alarm and impair one's judgment. In my experience, the marginal type has been equally as hazardous as, and more troublesome than, the central type. Except in two instances blood loss has not been a factor in this series. These should have been transfused. One was my error. The other was moribund when I first saw her. Infection played equally as important a role in the mortality. It was responsible for two deaths and a morbidity in thirteen other cases. For that reason I am opposed to a vaginal pack preliminary to transporting the patient to the hospital. If the cervix is as much as one-half dilated and there is no bleeding, the patient should be left alone until the cervix is fully dilated

and at that time labor should be terminated in the most conservative manner. If there is bleeding, or if the cervix shows little or no dilatation, the introduction of a No. 5 Voorhees' bag is probably the best procedure. The extra-ovular placement is to be preferred. Rupturing the membranes is a poor way of inducing labor in placenta praevia.

PLACENTA PRAEVIA

Number of cases 203 (colored 28, unmarried 11, twins 2 sets). Ages ranged from 12 to 47 years, average age 29.2. Multiparae 120 (59.1 per cent). Blood pressure less than 100, 10 cases; 100-149, 129 cases; 150-199, 19 cases; above 200, 3 cases.

MODE OF DELIVERY

| | <i>No. of cases</i> | <i>Maternal deaths</i> | <i>Fetal deaths</i> |
|--|---------------------|------------------------|---------------------|
| Spontaneous | 23 | 0 | 9 |
| Low forceps | 2 | 0 | 0 |
| Mid forceps | 1 | 0 | 0 |
| Breech extraction | 6 | 0 | 4 |
| Braxton-Hicks version | 8 | 0 | 5 |
| Version and extraction | 18 | 1 | 3 |
| Cesarean section | 6 | 1 | 3 |
| | 64 | 2 | 24 |
| Bag (115 cases) | | | |
| Spontaneous delivery | 10 | 0 | 9 |
| Low forceps | 1 | 0 | 0 |
| Mid forceps | 4 | 0 | 1 |
| Breech extraction | 9 | 0 | 6 |
| Braxton-Hicks version | 5 | 0 | 4 |
| Version and extraction | 88 | 3 | 28 |
| | 117* | 3 | 48 |
| Induction of labor by rupturing membranes (24 cases) | | | |
| Spontaneous delivery | 9 | 0 | 2 |
| Low forceps | 8 | 0 | 0 |
| Mid forceps | 4 | 0 | 2 |
| Version and extraction | 1 | 0 | 1 |
| | 22 | 0 | 5 |

Eclampsics, 1; infarcts placental, 23.

Fetal deaths, 75.

Length of child, 21 cm. to 59 cm. Average length, 46.52 cm.

*Two sets twins.

Medical Arts Building.

LYMPHOGRANULOMA VENEREUM.*

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and

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Lymphogranuloma venereum is a venereal disease due to an ultra-microscopic filterable virus. Our present concept of this disease has been arrived at as a result of the work of Frei¹ in 1925 which made available a skin test for diagnosis, and through the work of Hellerström and Wassén² in 1930 which proved the disease to be due to an ultra-microscopic virus.

At the present time we recognize various clinical forms of the disease to represent phases of one disease rather than separate clinical entities. Thus, one considers tropical bubo, esthiomene, lupus vulvae, chronic elephantiasis and ulceration of the vulva, syphilome, and many cases of inflammatory stricture of the rectum as being different stages of lymphogranuloma venereum.

The disease, as we now know it, was recognized first in the tropics as one characterized by chronic infection of the inguinal nodes. In 1865 Trousseau³ observed and described such disease as occurring among the young Creoles of the Islands of Reunion and Maurice. Sheube³ made similar observations in Japan and called the disease climatic bubo. The disease has been described variously as strumous bubo, subacute inguinal adenitis and tropical bubo. Nicholas Durand and Fazre³ in 1913 gave a clinical and histologic study of a disease which they termed "subacute inguinale lymphogranulomatosis"; they did not apparently associate the condition which they described with tropical bubo. It remained for Findlay⁴ in 1932 to present evidence that climatic bubo and lymphogranuloma inguinale as described variously were the same disease, and were caused by the same filterable virus. At the present time numerous terms are used to describe this disease; the most generally accepted and favored name at the present is lymphogranuloma venereum.

Etiology: The disease is due to an ultra-micro-

scopic virus. Hellerström and Wassén² in 1930 reported their successful transmission of the disease to apes. They were able to show also that after such transmission an antigen could be prepared from the brain, cerebral spinal fluid or glands, and that this antigen would give a positive Frei test in the human infected with the disease. Since these studies, accounts of the transmission to most of the common experimental animals have been reported. There have also been described occasional accidental inoculations with the resulting production of the disease in the human.

Incidence: The disease is said to occur much more commonly in men than women. Frei and Hoffman⁵ in 1917 found only 15 per cent of their fifty cases of lymphogranuloma venereum occurring in women. Hellerström⁶ in 1929 found only 4.3 per cent of forty-seven cases to occur in women. In this country DeWolf and Van Cleve⁷ reported in 1932 the occurrence of the disease in only three women out of fifty-five patients, and these were of the colored race. It has been suggested that women are less susceptible to the virus than men. In the United States the disease is much more common among the negro male. However, in a recent small series collected by us of twenty patients with positive Frei tests, there were eleven colored females, three white females, two white males and four colored males.

Pathology and Clinical Course of the Disease: Save for accidental inoculations in laboratories, the disease is acquired venereally. The incubation period is said to vary considerably. There is a variation of from two days to three weeks following exposure until the appearance of the characteristic lesion. This primary lesion is quite small and often passes unnoticed. It is usually followed in ten days to three weeks by development in the regional lymphatic glands and in the adjacent connective tissue of a subacute or chronic inflammatory reaction and by the production in most cases of multiple small foci of suppuration. Later manifestations of the disease result from lymphatic spread. The

*Delivered before the Durham-Orange County Medical Society, Durham, N. C., November 13, 1936, and before the South Piedmont Medical Society, South Boston, Va., April 20, 1937.

pelvic lymphatics may be involved with localized parametritis and fixation of the uterus. Lymphatic involvement of the external genitalia may result in elephantiasis of the vulva associated with ulceration, and may give the typical picture which has been described under the term *esthiomene*. Involvement of the rectal lymphatics and recto-vaginal septum may result in an inflammatory stricture of the rectum and recto-vaginal fistula.

The primary lesion may take the form of a small herpetiform vesicle or ulcer which is often circular in outline and frequently no larger than a pinhead. The ulcer as a rule has clean edges and is surrounded by a reddened zone; there is only slight infiltration and no true induration. The lesion is usually painless. A small amount of serum is exuded which upon examination shows no characteristic organism.

The most common site for the primary lesion in the male is the coronal sulcus. It may be found, however, on any part of the glands or prepuce. In the female it occurs on any part of the vulva, but most commonly at the fourchette. In many instances the initial lesion is looked upon by the patients as a simple abrasion, and by the time they come under supervision because of adenitis, the primary lesion is often healed. In other instances the primary lesion may persist even after the bubo is well developed. The primary lesion may be a papule which may be oval or circular and often shows a necrotic center. Occasionally, a small, hard elastic nodule may constitute the primary lesion. Usually this nodule contains a fistulous tract which exudes a sanguineous discharge.

The adenitis in many instances and particularly in the female may be minimal and may pass unrecognized. The earliest symptom is that of stiffness or aching in the groin which is later followed by swelling. The first gland to become involved usually belongs to the medial group of the inguinals. The adenitis may result only in swelling followed by regression and spontaneous healing, or it may progress to suppuration. As a rule the whole group of inguinal nodes is involved and forms an oval, lobulated mass adherent to the skin, which takes on a purplish discoloration. The adenitis may be unilateral or bilateral. The proportion of cases in which the adenitis progresses to suppuration is not known. In our series two patients, both males, showed suppuration. As a rule, suppuration is ac-

companied by the formation of multiple fistulae which, when they are present, are pathognomonic of the disease.

According to Barthels and Biberstein⁸ and to Jersild,⁹ who reviewed the studies of the lymph supply of the male and female genitalia, the lymph nodal reactions of the disease are dependent upon the draining lymph supply of the parts affected. In the male the lymph drainage of the genitalia is primarily to the inguinal nodes; whereas, in the female only the lymph from the clitoris and external vulva drain into the inguinal nodes. The supply from the vaginal mucosa and the posterior vagina drain into the lymph plexuses about the rectum. Hence, one would expect involvement of the rectum and rectal stricture to be more common in the female. In our series there were six patients who showed involvement of the rectum, resulting in either recto-vaginal fistulae or strictures. All of these patients were colored females. In the two white females in our series who showed inguinal node involvement and who showed the primary lesion also, this lesion was found to occur in the region of the clitoris.

Among the late manifestations of the disease is the so-called ano-rectal phase. This is more common among the females because of the peculiarity of the lymphatic drainage. As a rule, there occur small, flat and indurated lesions about the posterior fourchette or rectum which resemble *condylomata lata*. As these become conglomerate, multiple fistulae may occur, and as the lymphatic drainage is blocked and scar tissue forms, elephantiasis of the tissue and large rubber-like polypoid growths about the genitalia develop. The infection progresses in instances and spreads about the rectum with production of induration and dense rectal strictures. Involvement of the recto-vaginal septum may result in recto-vaginal fistulae of large size. Involvement of the pelvic lymphatics may result in parametritis and uterine fixation.

The involvement of the rectal and pelvic lymphatics may produce distressing rectal and genital symptoms. Low-grade pelvic pain, backache, dyspareunia and pruritis are common symptoms.

During the stage of invasion of the lymphatic glands constitutional symptoms such as fever, chills, sweats, anorexia, nausea, vomiting, weight-loss, lassitude and prostration may occur. Epistaxis and meningeal reactions with intense headaches which pass off in a few days have been described. A gen-

eralized adenopathy has been observed in a few instances. Splenomegaly and articular manifestations have occurred. Anemia is relatively common and eosinophilia is observed frequently.



Fig. 1.—Early primary ulcerative lesion situated to the left of the urethral meatus (Case I.) There was associated bilateral inguinal adenitis.

Diagnosis: The lack of induration and the absence of any characteristic organism in smears from the initial lesion distinguish it from genital lesions of syphilis, chancroid, etc. When the lesion occurs within the urethra, it must be differentiated from gonorrhea in particular by the smear and culture, and a negative fixation test. From genital herpes it is quite difficult to diagnose in the primary stage,



Fig. 2.—Perineo-ano-rectal phase of the disease.

although Stannus³ has noted that material from the herpetic vesicles when rubbed into the scarified cornea of the rabbit gives rise to a keratitis, while a similar material from a lesion of lymphogranuloma venereum gives a negative result.

A subacute inguinal adenitis without any obvious

cause always leads one to suspect lymphogranuloma venereum. If the adenitis has reached such a stage that there is a matted mass of glands with multiple fistulae, the diagnosis is practically assured. The bubo of lymphogranuloma venereum does have the Indian rubber-feeling of the satellite bubo of syphilis. It is not tender or painful as is the bubo of soft chancroid. Tuberculosis of the inguinal glands is difficult to diagnose differentially from lymphogranuloma venereum except by culture and staining methods.

All patients who show inflammatory strictures of the rectum should be regarded with suspicion and should have the benefit of a Frei test. Elephantiasis vulvae and genito-ano-rectal syndrome or esthiomene are quite pathognomonic of the disease in this country. In the tropics the possibility of filarial disease must be borne in mind.

The biopsy specimen of any of the lesions of lymphogranuloma venereum does not show anything characteristic. There is commonly heavy fibrosis and a picture of chronic inflammation characteristic of the tissue involved. Biopsies are of importance in many instances to rule out the possibility of a carcinoma, occurring either singly and being confused with lymphogranuloma venereum, or occurring along with the disease.

Numerous reports since the original report by Frei¹ in 1925 describing his skin test for lymphogranuloma venereum have emphasized the specificity of this test. The directions laid down by Frei for preparing the antigen are essentially these. The person from whom the antigen is to be made should be proven free from tuberculosis and other venereal disease, both past and present, by clinical examination and by negative tests for syphilis, gonorrhea, etc. The gland from which the pus should be drawn must be one which has undergone softening but not fistulation. The pus is aspirated, care being taken that it is not mixed with blood, and is then mixed with physiological saline in proportions of one part of pus to five or six of saline. It is then heated to 60° Centigrade for two hours over water bath, and again the following day for one hour, with care being taken not to heat it above 100° Centigrade because such a temperature destroys its antigenic power.

There have been prepared a number of other types of antigens. Reports are available in the literature concerning these. These are prepared usually from

the monkey, guinea pig, and in some instances the rat, by making an emulsion of the brain and spinal cord of such animals which have been inoculated with human material. There are some commercial antigens on the market. These have not given us uniform results, probably due to the fact that they degenerate quite rapidly.

For diagnosis, we use an antigen prepared in the Duke Laboratory from bubo material obtained from patients at the hospital. Our technique for doing this test is as follows: One-tenth cc. of our antigen is injected intracutaneously in one arm, and the other arm is injected similarly with a similar amount of normal saline. The test is read at twenty-four and forty-eight hours. A positive reaction consists in the production of an indurated and reddened area at the site of the injection. This area is from one-



Fig. 3.—Extensive genito-cruro-ano-rectal phase.

half to one centimeter in diameter. A small necrotic area in the center of the lesion may occur.

A negative skin test does not necessarily rule out the possibility of disease. One should always be sure in certain instances that the antigen which is used for the test will give a positive reaction in a known case. The patient who reacts positively usually remains so for years, perhaps for life. The Frei test cannot be used to prognosticate the results of therapy.

Treatment: There is no specific treatment. The treatment in general is unsatisfactory. The initial lesion usually heals spontaneously and requires no treatment. Occasionally fulguration or caustics may be necessary. In the bubonic stage the most effective treatment in our experience has been the early complete excision of the inguinal lymphatics and closure without drainage. Some have advised X-ray radi-



Fig. 4.—Hypertrophic vulval phase (Case II).

ation of these glands and excision later after the severe reaction has subsided.

We have noted some good responses in several instances in which X-ray in the full erythema dose was given in women with the early ano-rectal stage. A vulvectomy is necessary and productive of good success in the handling of esthiomene and of elephantiasis. Preliminary preparation of the skin is often necessary in these cases to take care of secondary infection. A rectal stricture requires frequent surgical dilatation of the rectum. It is a distressing condition and in some instances the patients may require permanent colostomy for relief. Attempts to repair recto-vaginal fistulae occurring from this



Fig. 5.—Same patient as shown in Fig. 4, after vulvectomy.

phase of the disease are practically universally unsuccessful.

Medical treatment has proved without avail. Various drugs have been used with little success; among these are quinine, emetine and various antimony compounds, including tartar emetic and faudin. Iodine and the iodides have been used with some degree of success, and there have been recently some favorable reports from vaccine therapy. Gay-Prieto¹⁰ in 1932 described a method of intravenous vaccine therapy which he considered of definite benefit. He called attention to the fact that any attempt by a subcutaneous route would prove of no value. We have had no results with this type of therapy. Recently Thomas and McCarthy¹¹ reported successful treatment in one patient with a bouillon filtrate.

CASE REPORTS

Two case reports are included to illustrate the method of treatment in the various phases of the disease:

Case I.—Mrs. P., a white female of thirty-six years, was admitted to the hospital because of swelling in the groin. She had been well until three weeks before admission when she noted a painless enlargement in the gland of the right inguinal area. She gave no history of primary lesion.

The general physical examination was entirely negative, except for a matted, lobulated mass of inguinal glands in the right groin, and smaller but similar glands in the left. The primary lesion was located as a minute and shallow ulcer just lateral to the urethral meatus.

The treatment consisted of fulguration of the primary lesion and bilateral dissection of the inguinal glands. The patient made an uneventful recovery and has had no further difficulty.

Case II.—E. A., a single colored female of twenty-two years of age, entered the hospital July 22, 1935. She complained of a growth on the vulva of four to five years' duration, which began about two weeks after sexual contact as a small ulcer on the vulva. The growth had increased rapidly during the year before admission and finally became ulcerated.

The physical examination was entirely negative except for the lesions around the vulva. There was marked hypertrophy of both labia minora and the clitoris. These growths were hard, firm and cauliflower-like. There was ulceration on their medial surfaces. The vagina and rectum were not involved. The Wassermann and Kahn reactions and the darkfield examination of the ulcer secretions were negative. The Frei test was strongly positive.

The secondary infection of the lesion was cleared up with Sitz baths and local applications. A simple vulvectomy was performed on August 17, 1935, and the patient made an uneventful recovery and was discharged

after twelve days. Follow-up examination almost two years later showed no recurrence other than a small shallow ulcer just inside the vagina.

SUMMARY

Lymphogranuloma venereum is a venereal disease which is caused by an ultra-microscopic filterable virus. It is said to occur more frequently in negro males, but in our experience it is found commonly in the female also. The disease recently has been delineated to include many syndromes which in the past had been grouped as separate ones. It is recognized now that many cases of inflammatory stricture of the rectum in the female are due to this disease. In this country elephantiasis of the vulva and esthiomene are regarded as almost pathognomic of the disease. It is to be observed that the disease has no connection at all with granuloma inguinale which is a disease of the skin and not of the lymphatics.

A diagnosis of the disease can be made usually from the examination, from the history of exposure and by means of the Frei test. The disease is a venereal one and should be handled as such. The treatment is distinctly unsatisfactory and at the present time most of the patients require surgery in some form for relief. The Frei test, while it is important in diagnosis, has no value in estimating the progress or efficiency of treatment in that the Frei test is not influenced by treatment.

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EUROPEAN EYE CLINICS.*

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We were most kindly received in all the clinics visited. Every effort was made to demonstrate not only the routine cases but in many instances they had particularly interesting cases brought in from considerable distances.

To Americans it is very amazing to see the great number of cases of tuberculosis of the eye, mainly scleritis, episcleritis and irido-cyclitis. As you well know, European ophthalmologists minimize the importance of focal infections. Although the eye conditions were undoubtedly tuberculous, many of these patients had diseased teeth and I am confident the teeth had considerable bearing on the eye condition.

SPASTIC ENTROPION

Ronne, of Copenhagen, uses one to two Michel metal skin clips. I have used this method on four occasions with excellent results but would not advise its use in young women on account of the scarring that takes place where the points of the clips perforate the skin. The clips must include in its grasp a bundle of muscle fibres as well as skin.

ORGANIC ENTROPION

In Meller's clinic the Hotz operation is the procedure of choice. They remove as much muscle as possible. The placement of the sutures is very important. The sutures, three in number, are put first through the skin, then through the edge of tarsus farthest away from the ciliary margin, and then through the skin, and tied.

*Read before the Virginia Society of Otolaryngology and Ophthalmology, May 8, 1937.

LAGOPHTHALMUS

Ronne, of Copenhagen, does a tarsorrhaphy nasally just external to the puncta in cases of lagophthalmus. Later, if the band is found to be too wide, he makes it narrower by cutting the required amount from the temporal side.

ENUCLEATION

In Meller's clinic they use the regular retrobulbar injection, followed by four deep injections with a curved needle into the muscle cone going between the four recti muscles, up and in, down and in, up and out and down and out.

Costal cartilage obtained from cattle is used for an artificial globe in implantation operations. The cartilage is so inserted that the perichondrium is anterior, i. e., next to the conjunctiva.

DIVERGENT SQUINT

In Meller's clinic they first tenotomize the external rectus, then advance the internal rectus, using the Meller procedure which is similar to the Worth operation. A suture is placed in the region of external rectus. This suture is then carried across the eye and attached to the bridge of the nose with adhesive plaster.

CATARACT EXTRACTION

Meller does not favor the intracapsular procedure except in special cases. His routine operation is as follows:

1. A suture is put through the superior rectus muscle. An assistant with one hand holds up the upper lid with a lid hook and the ends of the

superior rectus suture. With the other hand he holds down the lower lid.

2. Small corneal incision.

3. Large capsulectomy, using Fuchs-Meller capsule forceps.

4. Expression of the lens, using the point of a strabismus hook over the lower portion of the cornea.

5. A very small peripheral iridectomy.

6. Considerable time and patience is used in expressing thoroughly the lens material, massaging the cornea with thumb and finger through the lids and also using Daviel spoons.

7. No sutures are placed in the conjunctiva.

8. Atropin is not used before the operation and none used until the first dressing twenty-four hours after the operation.

9. Both eyes are bandaged. The patient is told to open his mouth; he is then lifted forward and assisted to the floor and is walked back to his bed.

Urbanek, of Vienna, prefers the intracapsular operation, particularly in cases with posterior synechia or where there has been previous iritis or uveitis. In these cases he does not tumble the lens, but grasps the lens above and pulls the lens directly out through the incision.

CATARACTS WITH POSTERIOR SYNECHIA

Meller uses two special knives, one to separate the synechia on the temporal side of the pupil, and another to separate the synechia on the nasal side of the pupil. He then proceeds with his usual cataract operation.

CONGENITAL CATARACTS

Meller operated upon a congenital cataract in a patient thirty-five years of age, using a knife needle. He stirred up the lens vigorously but did not perforate the posterior capsule. Six days later he made a keratome incision through the lower limbus and expressed most of the lens material.

AFTER OR SECONDARY CATARACTS

Meller uses the Bowman method as a rule, but, in the presence of a thick capsule, makes a keratome incision at the limbus, pushing the point through the membrane and then uses a dull hook to pull the membrane out through the keratome incision.

King, at Moorefields, inserts a Zeigler knife needle

into the capsule close to the proximal edge of pupil and keeps the blade of the knife behind the capsule until almost to the distal pupillary border, then again perforates the capsule, cuts upward, giving a V-shaped incision with the apex above.

ACUTE GLAUCOMA

Adelbert Fuchs considers the iridectomy *ab externa* of Salzmann the best operation, particularly in the presence of a shallow anterior chamber. He proceeds as follows:

1. Makes a conjunctival flap the same as for the Elliott trephine operation.

2. Grasps the conjunctival flap with forceps and then with a keratome uses the point to scratch through the sclera $\frac{1}{2}$ mm. back of the limbus and perpendicular to the sclera, the incision being about 4 mm. in length.

3. Iridectomy.

4. Instills atropine.

Meller always uses a cataract knife to make the incision except when the iris is markedly inflamed or posterior synechia are present, in which cases he uses a keratome.

1. Rubs 20 per cent solution of cocain on conjunctiva at upper and lower limbus, then injects novocain in the region of the superior rectus muscle, no superior rectus suture being used in glaucoma cases.

2. Incision made with a cataract knife.

3. One drop of a 20 per cent solution of cocain is dropped on the prolapsed iris.

4. Iridectomy.

Urbanek also uses a cataract knife for the incision, but, before making the corneal incision, he does a posterior sclerotomy, massages the eye until it is soft, then make a corneal incision with a cataract knife, followed by an iridectomy.

CHRONIC GLAUCOMA

Meller prefers cyclodialysis above all other operations for chronic glaucoma. He does not like iridencleisis or trephine operations.

1. Six minutes before the operation, a subconjunctival injection is made, using 2/10 cc. of a 3 per cent solution of cocain in the region of the ciliary body that is to be separated.

2. Novocain injection is made in the region of the superior rectus muscle. No suture is placed in the superior rectus.

3. Makes an incision through the conjunctiva down and out.

4. Keratome incision through the sclera.

5. Enters the spatula and separates the ciliary body from the sclera for about one-third of its circumference.

6. Uses the actual cautery to bleeding conjunctival vessels.

Urbanek uses cyclodialysis if the anterior chamber is deep and condition non-inflammatory, but prefers Elliott trephine if anterior chamber is shallow. Uses plenty of atropin after Elliott trephine operation to encourage the anterior chamber to reform. Adelbert Fuch's considers the Elliott trephine the best operation for simple chronic glaucoma.

SECONDARY GLAUCOMA IN UVEITIS

Urbanek, of Vienna, makes a very wide iridectomy above, removing about one-third of the iris, the coloboma being so large there is very little chance of an exudate closing such a large gap in the iris.

SECONDARY GLAUCOMA FROM PROLAPSE OF VITREOUS INTO THE ANTERIOR CHAMBER

Urbanek advises against the use of pilocarpine or eserine; instead, he uses atropin. The mechanical effect of miosis is to increase the tension by the contracted pupil strangling a bead of vitreous, thereby preventing communication between the anterior and posterior chambers.

ANGIOMATOSIS OF RETINA

Foster Moore, of Moorefields, showed a case of bilateral angiomatosis of the retina, the left eye being blind. Radium was used on the right eye with apparent recovery.

GLIOMA

Foster Moore showed a case of glioma in a boy, age eight, with apparent arrest of the growth following the use of radium. The lens showed a posterior cortical cataract. The English ophthalmologists use radium more frequently than we do. We saw several radium cataracts following the use of radium for malignant conditions about the face, particularly for malignancy of the antrum.

SYMPATHETIC OPHTHALMIA

Raeder, of Oslo, used malarial infection in the treatment of a case of sympathetic ophthalmia; also

showed us a case of sympathetic ophthalmia in a patient who had an iridencleisis performed three months previous to the onset of sympathetic ophthalmia.

CHRONIC DACRYOCYSTITIS

Averback, at the Helmholtz Eye Hospital in Moscow, uses the Toti operation. He believes success depends upon a large opening through the bone. Lauber, of Warsaw, prefers the West operation. Urbanek, of Vienna, has only had four failures in 160 cases following the West operation.

TUBEROUS SCLEROSIS OF THE BRAIN WITH RETINAL CHANGES

Vogt, of Zurich, demonstrated a case of tuberous sclerosis of the brain showing retinal tumors having the appearance of a group of small white pearls near the disc. Vision was normal. Patient also showed the following characteristic signs and symptoms—retarded mental development, epileptic seizures, and sebaceous adenomas of the face.

DETACHMENT OF RETINA

Larsson method is used by Larsson, of Stockholm, Foster Moore, of London, and Hagan, of Oslo.

Safar method is used by Lauber, of Warsaw, and in the Meller clinic.

Kruckmann, of Berlin, uses the method of Weve.

Urbanek uses an electrolysis needle, piercing the sclera, choroid and retina. He continues the perforation until the tear is localized. Fundus is observed with ophthalmoscope after each application. Position of perforation is shown by a group of bubbles. After accurately localizing the tear, a very fine diathermy needle 5 mm. long is used, going through the sclera and choroid. The fundus is observed after every one to five applications of the diathermy needle.

Urbanek claims a large diathermy needle causes hemorrhage and that, with the old technique, hemorrhage is the cause of 5 per cent of the failures.

Keeps patient in bed for five weeks and then has patient wear hole spectacles for several months.

Urbanek finds that 60 per cent of his cases have remained cured when examined one year after the operation.

Vogt, of Zurich, uses an electrolysis galvanization needle. He puts the anode any where on the sclera. The cathode, in the form of a small needle, pierces the sclera, choroid and retina.

In Meller's clinic they have a rather simple method of localizing the tear by the use of a probe which has been dipped in a solution of gentian violet; the probe is pushed along the surface of the sclera in the region of the tear; an assistant observes the indentation of the sclera with the oph-

thalmoscope. When the indentation is over the region of the tear, the probe is lifted from the eyeball. The gentian violet stain on the sclera shows the position of the tear.

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TRAUMATIC SURGERY.*

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The aim of traumatic surgery is to restore as quickly and as perfectly as possible the usefulness of the injured part. Wounds of the soft parts must be made to heal, bones made to unite in good working position, nerves and tendons repaired, and in the case of injured viscera, life itself must be saved.

There is a perfectly enormous loss of time and earning capacity following injuries, which must be minimized as much as possible. Few people have any conception of how serious a matter is the simple fracture of a leg, until it happens to themselves; how much more serious, a compound fracture with infection. There are weeks or months of confinement to bed, with mounting expenses for hospital and nursing care, and even the doctor is supposed to be paid something eventually. All this time, earning power has stopped, a man's job may be permanently lost, and if the result is poor, he faces a future with more or less permanent incapacity to earn his living.

Most traumatic surgery comes first to the office of the general physician; and upon his ability and discernment rest the fate of the injured man, a responsibility of the utmost gravity. A good proportion of such cases he can handle perfectly well himself, and he does handle them, and handles them well. This applies to the usual lacerated wounds, and to many simple fractures, where alignment and position remain good after simple manipulation, with no tendency to slip out of place again. Broken legs often fall into this category, as well as broken clavicles.

The severer types of injury, those involving the head, chest or abdomen, and fractures of the hip, the spine, and many joint fractures, call for consul-

tation with those who have had special training, if disaster is not to follow. The same is true of nerve and tendon injuries of the hand, which deserve far more than the casual office treatment they are so often accorded.

There are general principles in traumatic surgery which can act as guide-posts; they have to do with the fundamentals of wound healing. There are also many intricate details of knowledge which are needful to obtain the really excellent results which the patient has nowadays the right to expect. For the art of surgery has advanced much in recent years, and most injuries can be so well repaired that almost normal usefulness is regained.

To go back to fundamentals, wounds are healed in much the same way, no matter which tissue is injured, be it skin, bone or brain. Everyone knows of the delicate newly-forming fibroblasts and capillaries that we were taught about long ago; but strangely enough, we sometime forget about them, and allow the injured parts to be moved and disturbed long before these newly-formed elements can possibly be strong enough to hold together. This can only delay and hinder the process of repair. Give nature a chance to heal the breach, by suitable quiet rest of the injured member. Carry the injured hand in a sling; keep the injured leg horizontal for several days. For any but trifling injuries, keep the patient himself in bed.

It is evident that dead-space must be avoided, partly at least by gently snug dressings, and the closure of wounds by interrupted sutures wide enough apart to permit some oozing of bloody serum into the dressings. Otherwise the young newly-forming tissues will be long in bridging across the gap, to say nothing of the increased danger of infection developing in the stagnant pool of fluid.

*Read before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, October 12-14, 1937.

It is also evident that circulation must be good; and that excessive tension as from too snug bandaging must be avoided. It is even necessary, once in a while, to take care of tension from too great extravasation of blood by making relaxation incisions through the deep fascia. Specifically, supracondylar fractures in children must be watched for this excess tension, or Volkmann's contracture may be the penalty.

I have spoken above of rest; now let me emphasize that the period of rest must not be unduly prolonged, or the tissues will atrophy from disuse, circulation will become attenuated, joints and muscles will fibrose, and needless weeks and months will be spent in limbering up the wasted extremity. This necessity for active use is true even of the bones, whose union is hastened by guarded activity, permitting no undue motion at the site of fracture. At the proper time, therefore, active use of an injured part is not only permissible—it is imperative.

In thus speaking of the necessity both of proper rest, and of its opposite, timely active motion, I have purposely brought into focus the fact that traumatic surgery is quite a specialized branch of the medical art; and that the detailed care of injuries calls for considerable training.

Turning to specific types of injury, I can only give here the briefest synopsis of the most important of them all—injuries of the head, chest and abdomen. The general physician will have to call for consultation here with surgeons of special training, and upon their shoulders most of the burden will have to fall, both of diagnosis and of treatment.

Brain injuries, in a fourth of the cases, are fatal from the start. The patients remain deeply comatose, with stertorous breathing, and show no response to any form of treatment. Perhaps a tenth of brain injuries require operation, more specifically for extradural hemorrhage from the middle meningeal artery. More than half of brain injuries recover with simple expectant treatment. It is apparently best to avoid morphine, and to avoid drastic dehydration.

Children recover well; adults, less perfectly, often with some inability to concentrate, or to hold a job requiring mental effort, at least for some weeks or months.

Injuries of the chest can ordinarily be treated conservatively, perhaps aspirating bloody fluid, if

in large amounts, after a few days. Wounds that suck air, however, must be closed tight, and at once Empyema may be a later complication.

Wounds or contusions of the abdomen call for laparotomy if the viscera have been injured. Fortunately all general surgeons are familiar with the abdomen. A definite sign of gastro-intestinal perforation or rupture is afforded by the X-ray, which easily demonstrates escaped gas when present. Where no gas is demonstrated, there will usually be no perforation; but, if in doubt, laparotomy must be done to be sure.

It is very important to remember that the symptoms of traumatic perforation may be rather mild for some hours, as contrasted to the severe symptoms of perforated peptic ulcer. Therefore, maintain the closest watch over the patient until the danger is surely past—best in the hospital, and with X-rays as well as blood-counts. Since any or all the laboratory findings may be misleading, never fail to have a competent general surgeon in consultation from the first. More than one good man has lost his life because the surgeon was called late, at a time when all the signs of general peritonitis were all too clear to everybody.

Kidney wounds can usually be treated conservatively; by contrast, wounds of the spleen require splenectomy. Wounds of the bladder and urethra require drainage.

I offer this synopsis with apologies for thus dismissing life and death injuries with a word, when a monograph for each variety would hardly do justice.

Let me turn attention to a large and striking group of injuries, namely, broken bones. Proper treatment here is rewarded by return to excellent function; improper treatment is penalized by crippling often of a very serious degree—sufficient to change entirely the patient's whole mode of life.

The general principles are simple enough: get the broken bones back together, hold them straight, and let them heal solidly; but don't let muscles and joints stiffen any more than absolutely necessary in so doing. We owe a debt here to the orthopedists, who have cried out in the wilderness for years against splints and casts that unnecessarily immobilize neighboring joints, especially the joints of the hand. Restoration of function is their slogan, and it must be ours as well if we are to treat injuries acceptably.

It is necessary to know some of the details of fracture-work, in addition to being well-grounded in general principles. It is necessary to know, for instance, that chronic pain and deformity follow compression fractures of the spine unless sufficiently treated, and that such fractures are easily overlooked; and to know that broken femurs try to bow outward and backward, that broken heel-bones are to be treated in some foot-drop to prevent tension of the heel-cord, and that the shaft of the humerus is prone to non-union if broken squarely across. These are only examples.

As to the method of reduction of fractures, it is commonly a question of manual traction and manipulation under anesthesia, with fixation in a plaster cast. The bones should be at least partly end-on, and alignment should be straight. Note, of course, that for instance, the femur is not normally a straight bone, but is curved forward. This curve must be restored.

Where casts don't hold the bones, traction in bed often will do so. This applies to most femurs, and to some lower leg and upper arm fractures. Note that during traction in bed, occasional bed-side X-rays ought to be taken, if possible, for the bones may not be staying together properly at all. It seems to me, by the way, that traction in the Thomas splint assures better control of femurs than the popular double traction of Russell. In any case, traction is not a fool-proof method, and requires careful watching. This is only an example of the general statement that the treatment of all fractures requires constant vigilance.

Skeletal traction or fixation, and internal fixation by metal plates and so on, should really be done by those with considerable training. The same thing is true of non-padded casts, which can give plenty of trouble if improperly applied. In the hands of experts, however, these methods give perfect results in cases that would otherwise be doomed to prolonged or permanent disability.

There are certain fractures where considerable accuracy in treatment is necessary, perhaps the worst offender being the Colles' fracture. These are apt to be treated with inadequate anesthesia, local or general, and therefore imperfectly reduced; and I regret to say that I still see cases where the physician has reverted to the obsolete practice of binding the whole hand straight out on a board, thereby inevitably stiffening the fingers, often beyond redemption.

This is nothing less than a surgical crime, and should be plainly recognized as such. The fact is that the "run-of-the-mine" Colles' fracture can be put up in such a way that ordinary use of the hand, in eating, dressing, or filing papers, can be carried on within the first three or four days. And in any case, whatever else is done or left undone, free motion of the fingers, as in making a tight fist, must never be interfered with.

Pott's fracture, another offender, is often treated with inadequate attention to lateral shifting of the astragalus, and this leads to decided disability. With some care, this fracture can be reduced to a hair-line, and can be held in place perfectly well if the cast is molded carefully as it hardens, making inward pressure over a broad area of the foot below the outer malleolus, and corresponding counter-pressure laterally over a broad area of the tibia above the ankle. There is even an ambulatory method of treatment, the Delbet splint, which permits actual return to work within ten days or thereabouts. I have thus treated truck-drivers, miners, beauty-parlor operators, salesmen and brakemen, whose only complaint was that the clumsy plaster splint was kept in place long after they considered themselves cured.

There are other fractures that call for precise reduction, especially those that involve the joints and distort the bearing-surface. An important example is seen in children with fracture and displacement of the outer condyle of the humerus, which may even require open reduction.

However, approximate reduction will give a satisfactory result in many or most fractures, and this is often all that is attained, even by experts. In broken femurs in children, even a little overlapping is allowable, and open reduction is never required. None the less, the better the position of any broken bone, the more sure the union and the better the eventual function, other things being equal; and the superior results warrant considerable effort in watching to see that fractures are kept accurately reduced.

I have spoken above of position. Let me make it clear that alignment must always be good, or the joints will have to work out of proper line, a potent cause of unsatisfactory results.

Compound fractures belong strictly in the hospital. Operation, a modified debridement, should ordinarily be done, with loose suture if it seems reasonable. For if skin or soft parts can be made

to heal over the bone, it becomes for all intents and purposes a simple fracture, saving a lot of time and trouble for everybody. Here, again, only a trained man should undertake treatment.

In treating burns, life is to be saved, if possible, by tanning the surface and giving large amounts of fluid; the latest reported method uses methyl rosaniline and silver nitrate. The next important consideration is to get the skin surface healed as soon as possible by early skin-grafting. Do not allow the patient to remain in bed for months unhealed. The other important matter is to prevent contractures. Some of these are due to scar. Others, equally important, are due only to allowing the patient to lie in bed with his knees drawn up and his hips fixed. These latter are entirely preventable, but they will occur if specific care is not taken.

The final subject I wish to discuss is the care of hand injuries. A man is only as good as his hands, and severe hand impairment cripples the whole man more effectively than any other single injury save those that cause paralysis. The most explicit care is therefore demanded in dealing with this member.

First, injuries of the tendons and nerves. These should never be casually sewed up in the office; they deserve prompt and careful debridement under adequate anesthesia, with precise suture, using silk, not catgut, and with careful splinting to avoid tension. In the case of tendon injuries, there is good authority for beginning cautious active motion within twenty-four hours. In the case of nerve injuries, there is to be no tension on the suture-line until actual healing is under way—a month or so. And note well that the treatment just described only applies to injuries that are seen at once. If there has been a delay of even four or five hours, no attempt is to be made to repair the damage primarily, because of the danger of infection, which simply ruins everything. It is best to suture the skin only, leaving plenty of room between stitches for drainage; and, after solid healing, go back and do a secondary repair. I assure you that this whole matter comes under the head of major surgery, and that unpracticed treatment can lead to results that are emphatically less than satisfactory.

Equally important is the matter of hand infections. If deep at all, they warrant general anesthesia and a tourniquet, for only in this way can it be clearly seen just how far the pus has burrowed.

And the most precise care is necessary, not to spread infection into the tendon-sheaths and not to injure the digital nerves. Imperfect surgery here can result in a completely useless hand. I beg of you, do not try to take care of these hand infections by nicking the skin under ethyl chloride.

When any nerve injury has taken place in the hand or the arm, more than ordinary care is needed to be sure that the fingers do not stiffen. This is true of any of the three main nerves. If, for example, the radial nerve is injured by a broken humerus, it is of course necessary to prevent wrist-drop by a suitable splint; but be very sure that the fingers are allowed good full motion, and that it is carried out thoroughly every day. Fingers once stiffened never regain all their delicate flexibility. Watch them every time you see the patient, and see him often. I cannot enter here into the details of secondary repair of nerve injuries.

Finally, let me touch upon the restoration of function after injury. The people who sell diathermy machines and therapeutic lamps always tell you about their "modalities." The two modalities that are most effective of all are not for sale. They are, first, a definite intent on the part of the patient to get well. It is common knowledge that while an injured man is drawing compensation money, his disability can be prolonged for all he cares; whereas those injured on the farm, where there is nobody else to take care of things, get well with commendable speed.

The other really important "modality" is a return to light work at a suitable time. This is the most potent healer of all, which no amount of the most expert physiotherapy can replace, for it limbers up the stiff and weakened member, and at the same time takes the patient's mind off his disability as nothing else can do. And it starts him back on the road to earning his own living—perhaps an unfashionable thing in these days of government relief, but still necessary for some folks.

712 Botetourt Street.

DISCUSSION

DR. JOSEPH D. COLLINS, Portsmouth: All of us know that traumatic surgery is greatly on the increase. In fact, a large percentage of patients in the hospitals located on busy highways are in the hospitals as the result of automobile accidents. The principal lesson to be drawn from Dr. Todd's paper is that any man who attempts to assume the full responsibility for traumatic surgery should be most versatile, as he would have to

practice all branches of surgery. He has to be an ophthalmologist, a neuro-surgeon, a thoracic surgeon, an abdominal surgeon, an orthopedic surgeon and, recently, according to the public press, a traumatic surgeon recently had to perform the duties of an obstetrician.

There are one or two points I would like to emphasize. The first is the problem of brain injuries in connection with X-ray examination. The general public has been so thoroughly educated as to the value of X-ray examinations that about the first thing when a patient is brought to the hospital the relatives and friends of the injured man demand an X-ray examination. That, in my opinion, is a mistake, especially where there is shock. The moving and necessary handling of a patient incident to an X-ray examination may do an immense amount of harm.

I wish to emphasize the point that Dr. Todd made in regard to infections of the hand. So many cases of hand injuries are poorly treated. They deserve a surgical incision rather than a medical one. The matter of multiple injuries deserves consideration. When patients have been in serious accidents, automobile, train wrecks, etc., sometimes important injuries are overlooked. I have in mind a case where both femurs and several ribs were fractured and, also a dislocation of the right shoulder. This patient was brought to the hospital in extreme shock and for hours his life was despaired of. It was necessary to put him up in a very complicated apparatus and he complained a great deal of pain in various parts of his body, including his back. It was thought, however, that the backache was a reflex from his other injuries. However, after he began to get better of his other troubles, it was found that he was suffering from a compression fracture of his lumbar spine, and valuable time had been lost in the treatment of this injury.

I think Dr. Todd's paper is a very valuable contribution to this subject. However, he failed to mention the use of tetanus and gas bacillus antitoxin as a prophylaxis in these cases. I am sure this was inadvertence on his part.

DR. ALLEN SOUTHALL LLOYD, Norfolk: I want to thank Dr. Todd for his paper and I want to make one specific statement and one general one. Someone may have gotten a misconception following the statement that a Volkmann's contracture does not usually occur as a result of splinting

of a supracondylar fracture of the humerus. It is true that there have been cases in which, regardless of the position of the elbow, the radial pulse could not be palpated. In such cases, there is either an occlusion of the brachial artery by pressure of the bony fragments, a laceration of the brachial artery by the sharp end of one of the fragments, or an occlusion of the artery by pressure from a hematoma beneath the fascia. In such cases, it is, of course, necessary to open the fascia. It happens that I have never seen a case where it was necessary to incise the fascia. I have seen a number of cases where the radial pulse could not be palpated when the elbow was in flexion, whereas, on extension of the elbow the pulse became palpable. The best procedure to follow is that which has been pointed out time and again, namely, to feel for the pulse before any reduction is attempted. If the pulse is palpable with the elbow extended and is not palpable following reduction when the elbow is placed in acute flexion, then one must gradually extend the elbow from the acutely flexed position until it is possible to palpate the radial pulse. It is far better to sacrifice a certain amount of position than to risk ischemic contracture.

Now, a word about Dr. Todd's advice to refer these cases to a traumatic or orthopedic surgeon: I think that advice to a body of this sort is possibly not quite necessary. The same men who attend the meetings and who hear this paper are the men who read and study and know what is being done for various conditions. The very fact that Dr. Todd himself, a man of no special training, can obtain the nice results that we know he is capable of obtaining, proves that in all except a few especially difficult cases requiring the detailed knowledge of a specialist, it is unnecessary for a man to be more than a studious and conscientious general practitioner in order to handle these cases properly.

DR. TODD, closing the discussion: I appreciate the discussion of these gentlemen. I know that we could all contribute much to the discussion of traumatic surgery. Dr. Collins called attention to some important things I omitted in my paper. If he were not so kindly a commentator he might well have called attention to many other omissions. Dr. Lloyd sees things from the standpoint of the orthopedist, and I have emphasized above the importance of this point of view.

HYPERTENSIVE RETINOSIS.*

FRANCIS HENRY MCGOVERN, M. D.,
Danville, Virginia

The current concept of hypertensive retinopathy is based on the principle that all retinal changes are caused by the effects of elevated blood pressure. The term "albuminuric retinitis" is entirely a mis-

nomer because there is no correlation between the albuminuria and the retinal pathology; in nephrosis in which the albuminuria is at the maximum no retinopathy is present; and the term retinitis signifies an inflammatory lesion, whereas the changes are

*Read before the Danville Academy of Medicine, March 9, 1937.

entirely circulatory in origin. I prefer the term "retinosis."

The direct cause of the retinal changes has not been ascertained. It has been shown that nitrogen retention in the blood or hypercholesterolemia are not factors. Evidently the pathology depends largely on the degree and rate of development of the elevated blood pressure. Acute arteriolar spasm, chronic arteriolar sclerosis, angio-spastic ischemia and stasis, and arteriosclerotic endarteritis are responsible, in one phase or another, for the retinal lesions. The basis for the elevation in blood pressure itself appears to be in the arteriole and its abnormal reactivity to stimuli, thermal, emotional, chemical, or hormonal. It is not known whether the increased arteriolar tonus is a result of defect in the arteriole itself, or whether the stimuli or impulses to the arteriole are at fault, although the latter is the more likely explanation.

In the fundus the physician can observe with the ophthalmoscope the onset and progress of these arteriolar changes under a magnification of sixteen times their normal size. These observations are of immense importance not only in the prognosis and treatment of essential hypertension and glomerulonephritis, but also the acute angiospastic state in hypertensive toxemia of pregnancy.

My purpose is to emphasize a classification of fundus lesions in relation to the degree and prognosis of the hypertension. The terms, arteriosclerotic retinopathy, arterio-arteriolar sclerosis with hypertension, hypertensive neuro-retinopathy, arteriosclerotic retinitis, and many others are confusing. The simple gradation of retinal lesions into grades one to four offers to the ophthalmologist, general practitioner, obstetrician or internist a clear idea of the retinal pathology in the presence of hypertension.

Under this classification of primary or essential hypertension it can be readily understood whether the hypertension is acute or chronic, benign or malignant, compensated or uncompensated, and, most important, whether the prognosis is generally good or guarded. Secondary hypertension follows known diseases elsewhere in the body, glomerulonephritis, coarctation of the aorta, supra-renal tumor and hyperthyroidism, and is to be differentiated from primary hypertension.

In grade one essential or primary hypertension, sometimes classified as benign hypertension, the

fundus picture may be normal. However careful observation of the terminal arterioles in the macular region, the lumen of the arterioles appear constricted but uniform; there is decreased visibility of the usual number of macular vessels, and, later, corkscrew tortuosities can be seen in these vessels. The larger arteries remain full and of equal caliber with the veins; there is no evidence of exudate or hemorrhage.

Grade two retinosis has also been classified by some as arteriosclerosis with hypertension. The process has advanced in the fundus to a general attenuation of the retinal arterial tree. The smaller vessels become invisible. The larger vessels show caliber variations or irregularities in the diameter of the column of blood. Greater reflection of light from the sclerotic vessel wall gives the vessel a coppery appearance. The vessel wall, ordinarily invisible, may become visible as white streaks on each side of the lumen of the vessel. Arterio-venous constriction is marked. The appearance of a so-called arteriosclerotic retinitis, an advanced form of grade two hypertensive retinosis, is that of punctate and flame-shaped hemorrhages, and "hard" white spots, the latter most marked in the macular area. The thrombosis of a main or tributary vein may be noted. There is no edema of the retina or disc.

In grade three we find all the vessel changes in aggravated form, plus the appearance of "cotton wool" exudates and superficial and deep hemorrhages. It is the type of retinal picture seen in the acute vaso-spastic state of hypertensive toxemia of pregnancy. This latter entity has progressed in rapid manner from grade one hardly noticeable transient spasms of the retinal arterioles, varying in degree and site, to grade two general attenuation of the vascular tree and beginning signs of chronic arteriolar fibrosis, to grade three exudates and hemorrhages.

Grade four presents the well-marked retinal changes of malignant hypertension massive exudates, hemorrhages, edema of disc and retina.

The differential diagnosis between hypertensive retinosis and diabetic retinitis and choked disc is based largely on the caliber of the arteriolar system. The etiology of the retinal changes in glomerulonephritis is the same as that of hypertensive retinosis; frequently the condition cannot be differentiated on the fundal picture alone.

In a hypertensive retinosis without hypertension

it can be assumed that the hypertension existed when the retinal lesions developed, but the blood pressure has fallen, either due to cardiac decompensation, coronary disease, or improvement in condition.

The prognosis in grades one and two benign essential hypertension is generally good. Patients have lived twenty to thirty years after the first suspicion of elevated blood pressure. However, these people live under a constant threat of cerebral, cardiac, or renal accidents and complications. Systolic pressures of 200 and diastolic of 105-110 are not incompatible with long life; the body tissues have accustomed themselves to the gradual increase in vascular pressure. It is not so much the degree of hypertension as it is a matter of acute or gradual onset and whether the elevated blood pressure is compensated or uncompensated.

A diastolic pressure remaining above 120 mm. Hg. foretells a life expectancy averaging five to eight years, and under five if the retinal lesions progress in gradation or if cardiac or renal insufficiency is present.

In grade four the process is hyperacute; 90 per cent of patients with malignant hypertension die within eighteen months after the characteristic fundus changes are first noted. Surgery or any other known treatment will be to no avail.

The recent success in the treatment of hypertension by surgical means largely depends on the proper selection of patients, and the selection depends in good part on the gradation of retinal lesions. It

has been shown that surgery is indicated in grades two and three hypertension in which the organic arteriolar changes have not progressed to a non-reversible phase.

Recent studies have shown that if the retinosis of hypertensive toxemia of pregnancy appeared before the seventh month the infant mortality was 75 per cent and the mother had a 100 per cent chance of developing permanent renal and vascular changes. Toxemia developing before the seventh month without retinosis offers a prognosis not quite as severe. It behooves every physician or obstetrician to carefully observe the fundus in pregnant women with increasing hypertension.

The appearance of cotton wool patches and hemorrhagic areas gives warning of the near approach of permanent organic changes in place of just spastic changes. If the arterioles of the retina are affected, the arterioles elsewhere in the body are affected. If, in view of high or rising blood pressure, progressive retinal lesions occur, pregnancy should be terminated.

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 563 Main Street.

A CASE OF PNEUMOCOCCUS VAGINITIS TREATED WITH THE ANTI-SERUM.

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 Richmond, Virginia.

Department Gynecology, Medical College of Virginia.

Vaginal discharge in the pre-adolescent girl is not always gonorrhea. It may be the result of fungus infection, a foreign body in genital tract, a neoplasm, or a hormone imbalance. Several cases of pneumococcus vaginitis have been reported, but this case seems worthy of recording in view of the fact that the case was cured by a therapeutic approach not heretofore reported.

Case History: C. W., white female, age nine, was first seen on March 5th. The Mother stated that the

child had 2 weeks previously suffered an acute respiratory infection and the family physician had stated that there was some "congestion of the lungs." On February 26th, the child complained of itching and burning about the vulva and the under-clothes were stained with a yellow discharge. The family history and history of child's playmates was negative for genital infection.

Examination revealed a well-developed child with no complaint other than vaginal irritation. The

labia majora were inflamed, the urethra and Skene's glands were normal, the vagina was red and bathed in a purulent exudate. The cervix could not be exposed due to the intact hymen. A clinical diagnosis of Neisserian vaginitis was made and treatment begun with neo-silvol irrigations and theelin hypodermically. Examination of the smears, however, showed only Gram-positive diplococci. At the end of one week there was no clinical improvement. The discharge was then studied bacteriologically and the Gram-positive organisms found to be type 2 pneumococcus. The vagina was then treated for one week with optochin base with no clinical improvement. It was then decided to instill the type 2 anti-serum into the vagina. This was done and held in place for one hour. Forty-eight hours later there was a marked improvement in the appearance of the vaginal mucosa. A second instillation was given and at the end of another forty-eight hours all clinical signs of infection were gone. The patient has remained well until the present time.

1601 Monument Avenue.

Correspondence

Pronunciation of Digitalis.

Richmond, Va.

December 29, 1937.

TO THE EDITOR:

Digitalis is usually placed in the group of the five most important drugs. It has been the subject of literally thousands of essays, and enters into the conversation of medical men daily. Nevertheless it is probably the most consistently and uniformly mispronounced of the important medicaments. To the majority it has degenerated either to *digitahlis* or to the more enfeebled *digitālis* (a as in *băt*).

Examination of seven commonly used dictionaries, medical and general, disclosed only two instances in which mention was made of the permissibility of pronouncing digitalis in either the Oxfordian fashion (ah) or with the less obnoxious *ă*; once in a medical dictionary and once, as second choice to the correct pronunciation discussed below, in a standard unabridged work.

According to the remaining five authorities digitalis is correctly pronounced only as *digitālis* (a as

in *fāte*). As additional evidence for the accuracy of this pronunciation, I have been informed by S. J. McCoy, Ph.D., Professor of English at the College of William and Mary, that "assuming that it is desirable completely to anglicize the pronunciation of such words, we should follow the English rule (which has many exceptions of course): accented vowels in open syllables are long." Again, from "Rules for the English Pronunciation of Latin" in the section "A Guide to Pronunciation" by John S. Kenyon, Webster's New International Dictionary, Second Edition, Springfield, Mass., 1934, ". . . Vowels, when ending accented syllables, have always their *long* English sounds: as *pā'ter*, *hō'mo*."

Thus it appears that whatever be our shortcomings as to other information concerning digitalis, there can be no doubt as to the correct contemporary manner of its pronunciation.

Let us not lacerate further the orthoepic feelings of our staunch ally—it's *digitālis* (a as in *āle*)!

H. B. HAAG, M. D.,

Professor of Pharmacology,

Medical College of Virginia.

Public Health Statistics

I. C. RIGGIN, M. D.,

State Health Commissioner of Virginia.

The report of the State Health Department's bureau of communicable diseases, as compiled for the month of December, shows the following cases compared with the same month in 1936.

| | 1937 | 1936 |
|------------------------------|------|------|
| Typhoid and Paratyphoid | 10 | 31 |
| Diphtheria | 118 | 143 |
| Scarlet Fever | 195 | 176 |
| Measles | 467 | 141 |
| Meningitis | 15 | 20 |
| Poliomyelitis | 2 | 2 |
| Rocky Mountain Spotted Fever | 0 | 0 |
| Typhus Fever | 0 | 0 |
| Undulant Fever | 2 | 1 |
| Tularemia | 12 | 16 |
| Smallpox | 0 | 0 |

MEASLES CONTROL

During 1937 twice as many measles cases were reported to the State Department of Health as in

the preceding year. This increase is in accordance with the cyclic nature of the disease. A greater number may be expected to develop this year.

Despite the fact that many cases are mild and recover without complications or sequelæ, the seriousness of measles is emphasized by the fatality rates for specific age groups. The fatality rate for all ages varies between 0.5 and 1.0 per cent. However, for the first five years of life the proportion of cases which result in death is tremendously high. Even though only relatively few of the total measles cases occur in children under five years of age, more than 50 per cent of all deaths occur within that small number of cases. Moreover, the number developing complications and disabling conditions likewise is greater in this group than in any other one. Measles also is a real risk to children of any age who are undernourished or suffering from other diseases.

Consequently, public health efforts, as well as those of the family physician and parents, should be directed toward postponing the age at which the child is first exposed to measles. Particular protection is indicated for those children who are chronic invalids or debilitated from other conditions. While it is almost impossible to prevent measles sometimes in those living normally, it can be limited somewhat to those age groups in which it will do least harm. Again, many of its serious results can be prevented.

Prompt reporting of every case of measles is necessary if effective isolation is to be instituted by the health authorities. This is of paramount importance where the case reported is under five years or where there is an exposed child under five years of age in the household. When a case of measles appears in a home where there is also a baby or other young child not yet infected or known to have been exposed, these young susceptibles should be prevented from opportunity of infection by removal to the home of relatives where there are no susceptible children. They should, however, be under careful observation to detect early signs of the disease.

Passive immunization should be advised for exposed susceptible children under five years of age and for those suffering from other diseases. Convalescent serum has proven effective in preventing measles if given within the first four days after initial exposure. It usually will greatly modify the disease, if given between the fourth and seventh days. Passive immunity lasts about four to six weeks. Normal adult serum, either pooled or from the

parents of the case, and normal adult whole blood also have proven valuable in passive immunization, though in the latter case larger doses are required. The use of immune globulin, a placental extract, recently has received favorable comment in regard to the prevention and modification of measles. Following its introduction by Dr. Charles McKhann, it has been used by several workers with promising results.

The necessity of careful bedside nursing for cases of measles in children under five years of age is emphasized. Strict isolation should be instituted as much for protection of the case against secondary infection as for the prevention of the spread of the disease.

In short, it is believed that the mortality rate for measles can be reduced if the efforts of the health departments, the family physicians and the parents are directed toward the three following objectives:

1. Postponement of the age of attack of measles to at least six years of age.
2. Passive immunization of children under five years known or suspected to have been exposed to measles prior to the fifth day after exposure for complete prevention or between the fifth and seventh days for modification of the disease.
3. Good medical and nursing care of all cases of measles in children under five years of age.

CRIPPLED CHILDREN'S ACTIVITIES

Fifty-eight crippled children's clinics at thirty-two centers were held under the supervision of the State Department of Health during the last quarter of 1937. Nine hundred and fifty-six examinations were made and forty-six braces supplied by the Department.

Departmental nurses constantly are engaged in making surveys, developing clinics and in following up hospital and clinic cases. Cases recommended for X-ray are referred to a local doctor or hospital, when possible, compensation for such work being assumed by the Department.

When a hospital discharge record is received, the Department forwards a copy to the family physician and to the health officer or public health nurse for follow-up. A copy also is given to the staff nurses of the crippled children's bureau to afford follow-up nursing service in those counties lacking health officer and nursing activities.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. JAMES B. STONE, 15 Maxwell Road, Richmond.

President-Elect—MRS. HAWES CAMPBELL, Venter.

Corresponding Secretary—MRS. LAWRENCE O. SNEAD, 5307 New Kent Road, Richmond.

Recording Secretary—MRS. JAMES K. HALL, 3011 Seminary Avenue, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, 2502 Hawthorne Avenue, Richmond.

Chairman of Publicity—MRS. FRED J. WAMPLER, 4103 Forest Hill Avenue, Richmond.

Richmond Auxiliary.

Mrs. E. Latane Flanagan was elected president of the Woman's Auxiliary to the Richmond Academy of Medicine on December 10. Officers elected to serve with her were Mrs. James K. Hall, president-elect; Mrs. James B. Stone, vice-president; Mrs. Charles P. Mangum, recording secretary; Mrs. Austin I. Dodson, corresponding secretary; and Mrs. J. O. Fitzgerald, treasurer.

An amendment was made to the constitution requiring in the future two meetings a year instead of monthly meetings.

Plans for the work of the coming year were made.

Northampton-Accomac Auxiliary.

The Northampton-Accomac Auxiliary met at Nassawadox on January 4, at the home of Mrs. W. T. Green, with Mrs. Carey Henderson as joint hostess.

Our Auxiliary was very proud, indeed, to have received the trophy for attendance at the meeting in Roanoke in October and hopes it may have that pleasure again.

The chief project for the year is the hospital at Nassawadox, which seems to be the greatest need. We are also trying to place the *Hygeia* magazine in the public schools in this section.

The meeting was well attended, and we are glad to report two new members.

It was a pleasure to have Mrs. Southgate Leigh, Sr., as our guest speaker. She gave us a very interesting talk and answered many questions pertaining to Auxiliary work.

SUSIE N. LYNCH,

(MRS. J. MORTIMER LYNCH)

A.M.A. Radio Program for February.

FEBRUARY 2—Rheumatism and Arthritis; Known factors in the causation of arthritis and its care.
FEBRUARY 9—Healthy Hearts and Arteries; Known ways of protecting the heart against infection and hygienic abuse; how to live with heart disease.

FEBRUARY 16—Don't Fear Cancer—Fight It; Known factors in the cause, prevention and treatment of cancer.

FEBRUARY 23—Overcoming Diabetes; Individual efforts plus medical aid will win against diabetes.

These programs come in over NBC Red Network, on dates given, at 2:00 P. M., Eastern Standard Time.

Truth About Medicine

New and Nonofficial Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Sulfanilamide Tablets, 7½ grains.—Each tablet contains sulfanilamide (*The Journal A. M. A.*, July 31, 1937, p. 358; October 30, 1937, p. 1456) 7½ grains. E. R. Squibb & Sons, New York. (*J. A. M. A.*, December 11, 1937, p. 1989.)

Staphylococcus Toxoid—Squibb.—Prepared by growing cultures of *Staphylococcus albus* and *Staphylococcus aureus* in semi-synthetic mediums for forty-eight hours at 37 C. in a special container containing 80 per cent carbon dioxide and 20 per cent oxygen. The toxin is detoxified by treating with 0.3 per cent "solution of formaldehyde, U.S.P." Merthiolate 1:10,000 is added. The finished material is passed through a Berkefeld filter, and tests according to the regulations of the National Institute of Health are made to determine sterility. In addition, potency and safety tests are made. The product is marketed in packages of one 5 cc. rubber-capped vial, each cubic centimeter containing the toxoid derived from at least 1,000 necrotizing doses of toxin. E. R. Squibb & Sons, New York, N. Y.

Accepted Devices for Physical Therapy

The following devices have been accepted by the Council on Physical Therapy of the American Medical Association for inclusion in its list of accepted devices for physical therapy:

General Electric Model F Quartz-Mercury Ultraviolet Lamp.—This lamp is designed for use in the office or hospital under the direction of a physician. It is arranged to operate solely on alternating current, but special equipment may be procured where only direct current is available. The source is a quartz-mercury Uviarc burner, similar to the previously accepted source, but designed so as to minimize obstruction to direct or reflected radiation.

Its full radiation efficiency is reached in four minutes. Lamps are available for operation at 115 or 230 volts, 25, 50 or 60 cycles. Tests were made to substantiate the erythemic claims made for it by the manufacturer. It was found to produce a minimal erythema in one-half minute or less at thirty inches distance, in the average person. It appears to be a satisfactory device for the administration of ultraviolet radiation. General Electric X-Ray Corporation, Chicago. (*J. A. M. A.*, December 11, 1937, p. 1988.)

Propaganda for Reform

Bile Salts for Arthritis.—Researches on the effect of injections of bilirubin and bile salts in cases of chronic infectious (atrophic) arthritis have been begun but recently. Only a preliminary report of them has been made (*Science News Letter*, June 19, 1937) and this form of "treatment" is still distinctly an investigative procedure. Bilirubin is still quite expensive, the method of preparation of the bilirubin-bile salt mixture is empirical, and the solutions, which must be prepared daily, are not stable. Hence it is not yet a procedure for general use. This method of "research therapy" was reported by Thompson and Wyatt of Tucson, Ariz., at the Atlantic City meeting of the American Rheumatism Association, June 7. Ten patients with chronic atrophic arthritis were given daily intravenous injections of the bilirubin-bile salt mixture for about eight to twelve days. It was reported that artificial hyperbilirubinemia was accomplished and that remission in symptoms of the arthritis were induced for variable periods. In some cases symptoms recurred after two or three weeks; in other cases they had not returned after five months. Observations have also been made by P. S. Hench. He concluded that chronic atrophic arthritis and primary fibrositis are not necessarily relentless, uncontrollable diseases. Nature apparently possesses a highly effective method of producing a dramatic remission; this phenomenon is precipitated more rapidly and completely by jaundice than by any other known physiologic change or therapeutic method. If the method of Thompson and Wyatt can be repeated successfully it will permit clinical investigators to study the phenomenon much more closely and perhaps help them to isolate the responsible agent and utilize it for the future treatment of chronic arthritis. (*J. A. M. A.*, October 16, 1937, p. 1298.)

Injection Treatment of Hernia.—The injection method, according to its modern advocates, is applicable only to hernias that can be completely reduced and kept reduced by means of a truss. Its use is contraindicated in irreducible hernias, in sliding hernias and in the presence of an undescended testis. Injections are further contraindicated in the presence of superficial skin infections or erosions caused by the truss, in syphilis, diabetes, senility or marked emaciation. Hernias with a wide ring are not likely to give a good result. The case best suited for the treatment is the small reducible, indirect inguinal hernia in a young person. The complicated hernias and the large hernias of the middle-aged and the elderly are

the least suited for the injection treatment. Anatomic conditions in a direct hernia, in the umbilical and the femoral hernia, make the injection treatment undesirable, in the opinion of many. Although in the hands of some investigators the results seem to have been good, the complications, the difficulty in selecting suitable cases, and the still uncertain percentage of recurrences would seem to make the method unsuitable except under circumstances in which unusually careful technic and suitable care are possible. (*J. A. M. A.*, October 30, 1937, p. 1456.)

The Apple in the Management of Diarrhea in Children.—The Council on Foods reports that the use of fresh apples in the dietary treatment of diarrhea in infants and small children has been much publicized within recent years. Lately, preparations of dried and powdered apple have been similarly acclaimed. The Council on Foods has considered the available clinical reports. These reports cover practically every kind of diarrhea that is encountered in pediatric practice. The Council concludes that the evidence which is now available indicates that the apple is useful as a therapeutic agent in the dietary management of diarrhea. The mechanism responsible for the reported success of this diet is not clear. Apple powder when suitably prepared is considered a wholesome food and offers a convenient preparation for use in the management of diarrhea of infancy and childhood. It should be emphasized, however, that the use of the fresh or dried apple does not obviate the necessity for other measures, including parenteral administration of fluids when indicated, the careful selection of a suitable transition diet, and competent pediatric supervision. (*J. A. M. A.*, November 13, 1937, p. 1636).

Book Announcements

Library Service For Our Readers.

Recent acquisitions to the Library of the Medical College of Virginia, available to our readers, are given below. The only cost is return postage.

- Kurzrok, R.—Endocrines in obstetrics and gynecology.
- Langerhan, P.—Contributions to the microscopic anatomy of the pancreas.
- Life saving and water safety.—Prepared by the American Red Cross.
- Loeb, J.—Regeneration, from a physico-chemical viewpoint.
- McCarthy, L.—Histopathology of skin diseases.
- McClung, C. E.—Handbook of microscopical technique.
- Pottenger, F. M.—Tuberculosis in the child and the adult.
- Ramon y Cajal, S.—Recollections of my life.
- Roesler, H.—Clinical roentgenology of the cardiovascular system.
- Rose & Carless.—Surgery. 15th edition.
- Sarton, G.—History of science and the new humanism.
- Sigerist, H. E.—Socialized medicine in the Soviet Union.

Sindoni, A. M.—Diabetes.

Smith, H. W.—The physiology of the kidney.

Snell, F. D.—Colorimetric methods of analysis.

Sobotka, H.—Physiological chemistry of the bile.

Soddy, F.—The interpretation of the atom.

Stout, A. P.—Human cancer.

Thomson, St. C.—Diseases of the nose and throat.

Whitby & Britton.—Disorders of the blood. 2nd edition.

Physical Diagnosis. The Art and Technique of History Taking and Physical Examination of the Patient in Health and in Disease. By DON C. SUTTON, M. S., M. D., Associate Professor of Medicine, Northwestern University School of Medicine; Attending Physician and Chairman of the Medical Division of the Cook County Hospital; etc. St. Louis. The C. V. Mosby Company. 1937. Octavo of 495 pages. With 298 Text Illustrations, and 8 Color Plates. Cloth. Price \$5.00.

This text is relatively brief but profusely illustrated, and the illustrations are good. It follows a general plan that is orderly, systematic and clear. The book begins with a most excellent chapter on the history of physical diagnosis. After this follow chapters on history taking, general examination, the lungs, heart, abdomen and a brief review of the neurological examination. The signs and symptoms of the most common diseases are discussed briefly, and there is no attempt to link up clinical findings with the physiology or pathology. Not only that, but many statements made are questionable as, for example, the apex of the right lung is not more commonly referred to as "more hyper-resonant than the left." The reviewer also doubts that "history is relatively unimportant" in the classification of vascular diseases. References for supplementary reading would have added much to its value.

Since no two places teach physical diagnosis in exactly the same way, obviously this book will not meet the needs of all schools, yet, it deserves consideration as it has many excellent qualities.

HARRY WALKER, M. D.

Personal Hygiene. By C. E. TURNER, M. A., Dr. P. H., Professor of Biology and Public Health in the Massachusetts Institute of Technology; Chairman, Health Section, World Federation of Education Associations; Major, Sanitary Corps, U. S. A. (Reserve); etc. St. Louis. The C. V. Mosby Company. 1937. Octavo of 335 pages. With eighty-four text illustrations and three color plates. Cloth. Price, \$2.25.

This book aims to provide the teacher in college or university with a textbook on personal health. Addressed to the student of college level, it is intended to give him a practical superficial knowledge of

anatomy, physiology, and pathology. It is the "medicine and surgery in a nut-shell" type of work. It is for this reason that my enthusiasm in its behalf was not aroused—remembering as I do the admonition of Alexander Pope, "a little knowledge is a dangerous thing, drink deep or sip not of the Pierian Spring." If it is granted that a little medical knowledge is better than none at all—this book could fill the need. There are several gross misstatements of fact in the book. Like all lay-writers, the author has accepted as truth certain hypotheses, particularly as regards vitamins and hormones, which have not been confirmed. To the medical profession the book could have no possible value and I can think of but little good to be derived from recommending it to patients.

W. B.

Skin Diseases in Children. By GEORGE M. MacKEE, M. D., Professor of Clinical Dermatology and Syphilology, New York Post-Graduate Medical School, Columbia University; and ANTHONY C. CIPOLLARO, M. D., Associate in Dermatology and Syphilology, New York Post-Graduate Medical School, Columbia University. Paul B. Hoeber, Inc. New York. 1936. Octavo of xviii-345. With 153 Illustrations. Cloth.

As far as dermatologists are concerned, the name of George M. MacKee is one to conjure with. His revolutionary work on the use of X-ray and radium in the diseases of the skin, is a medical classic, and consequently anything he says, or writes, demands respectful consideration.

This book, however, belongs to that hybrid type of publication where a master is writing down to lesser men and automatically loses the sense of thoroughness, which one expects from such a source. The preface states that it is written for the general practitioner and will no doubt be of help to this class. Skin diseases are difficult to the trained man, and the skin diseases of childhood even more so, for one has to be acquainted with the manifestations of adults to understand the variations in childhood. The book is worth while for the opinions expressed where radium and X-ray is the suggested therapy. However, the chapter on syphilis is too meager to meet the situation. This has evidently been a hard book to write and where the subject is too large for the condensation, the authors give references as to where the subject may be pursued. It is well illustrated and this alone makes it worthy of the inclusion in any library.

T. W. M.

Virginia Medical Monthly

Founded by LANDON B. EDWARDS, M. D., April, 1874
 Owned by MEDICAL SOCIETY OF VIRGINIA since November, 1919
 WYNDHAM B. BLANTON, M. D., *Editor*
 AGNES V. EDWARDS, Richmond, *Business Manager*

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All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Monthly, 1200 East Clay Street, Richmond, Va.

This journal is not responsible for the opinions and statements of its contributors.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Subscription Price: \$2.00 per annum in advance. Single Copies 25c.

VOLUME 65

FEBRUARY, 1938

No. 2

Editorial

The State Hospital Situation—An Analysis.

Many, but not all, forms of mental sickness make it advisable for psychiatric patients to be withdrawn from general visitations during the period of their treatment, either at home or in a hospital. For many reasons, but chiefly for economic reasons, the majority of mentally sick folk are confined in so-called state hospitals. The term state hospital is a euphemism for the better old word asylum. The latter word once meant and should still mean a place of refuge. All of us in these perturbed times are in need of asyla, but the mentally sick especially, because such sickness means often the manifestation of personal social inadequacy. The prevailing type of civilization proved to be too much for the individual, and the crumpling-up of the citizen—woman or man—in failure to meet the demands of the social set-up we often call insanity.

But the term insanity is legal, not medical, and we doctors should not make use of it. No person is insane until so adjudged by a legal authority, however mentally sick, irrational, or dangerous to self or to others the person may be. Many mentally sick folk, because their condition makes it impossible for them to think rationally about their medical needs and to accept medical advice and treatment, are obliged to be adjudged insane and to be transferred from their homes to a state hospital. The public cannot be admitted freely as visitors to the

wards of state hospitals. A visitor might innocently lend a knife to a suicidal patient, allow a dangerous patient to escape, or an indiscreet visitor might carry out into the world weird stories about the speech and conduct of many patients. It would seem to be possible, even to those of us who live beyond the institutional walls and who know little of the life within, to realize that women and men who are legally committed to state hospitals must live during their invalidism largely withdrawn from the world and that their help must come from the Lord and from His ministering servants—physicians, nurses, attendants, and other hospital employees.

The purposeless public are rather thoroughly and altogether properly excluded as visitors from the general wards of state hospitals. In spite of an expected number of elopements the committed patients are rather securely kept in confinement—incarcerated, intramuralized, “locked-up”, as they sometimes complain. The excluding and the including are necessary features of state hospital life. But intelligent people understand, of course, that state hospitals are busy places in which many industries are carried on and that many patients are kept at work on the grounds, on the farms, and within the buildings. The term incarceration must be interpreted in keeping with such activities.

But it is true that patients committed to state hospitals have little access to the world and the people

of the world little access to them. Only those physicians, indeed, who are members of the hospital's medical staff can examine the patients of a state hospital or prescribe for them. Only those nurses and attendants employed by the hospital can carry ministration to the patients. The legal commitment makes possible all the hospital affords, but excludes the utilization of all medical and nursing skill, the use of all diagnostic and therapeutic facilities of modern medicine save those possessed by the hospital. Most that any physician is able to do for any patient, whether rational or irrational, whether at home or in a hospital, must ultimately reach the patient from the tip of the nurse's fingers. And fingers themselves are never dextrous and skillful, but only the mind which has them in control. Psychotherapy embraces all agencies that minister to the sick mind, and many of them are physical; good food, for example; but the sick mind is most effectively and comfortably dealt with by the well mind. And the mind of no mortal is called upon to exhibit tact, to exercise resourcefulness, and to make therapeutic use of sympathetic understanding so frequently as the mind of the psychiatric nurse.

Diagnostic work, both in the physical and in the mental domain, is difficult in the extreme in many mental patients. State hospitals should be equipped, therefore, with a medical and a nursing staff adequately educated by training and by experience to bring to the incarcerated patients, who are shut away from all outside medicine, the present-day attitude and the present-day skill not of psychiatric medicine alone, but of general medical science.

In the state hospitals in Virginia, including the Colony for the Epileptic and the Feeble-minded, there are more than 10,000 patients. Certainly fewer than thirty physicians are members of the five hospital staffs and in that relationship have access to the patients. There are probably actually fewer than twenty-five doctors on the staffs of the five hospitals. Five of those physicians are superintendents, all but overwhelmed each day by administrative duties. The superintendent has little time in which to do either diagnostic or therapeutic work. He is busy as an administrator. There is an assignment of more than 400 patients to the state hospital physician. If the superintendent is excluded the single physician sometimes has more than 600 patients under his care. No physician, however skillful, can develop an understanding of the

conditions of so many mentally sick folks and daily direct their treatment. The minds of relatively uneducated and uncultured nurses and attendants cannot be trained in the delicate art of caring for those who are emotionally and spiritually distressed and mentally disordered. Mental sickness, more than any other, calls for the display by the nurse of the keenest observation, the most unrelenting tact, and the possession of that quality that tends to keep hope forever alive and that constantly inspires courage. In mental sickness skillful nursing is often more consequential than medical attention.

Data available in the most recent reports from our state hospitals tend to indicate that an infinitesimal number of graduate nurses are members of the staffs of the hospitals. Probably few of those nurses had received before their connection with the state hospitals any training in psychiatry. Yet a nurse would scarcely be expected to function in an operating room, in an obstetrical service, in a pediatric ward, or in an allergy clinic without having had experience in those specialties. And in none of the five state hospitals in Virginia is there a training school for nurses. The members of the medical staffs are kept so busy with routine duties that they can have little time in which to instruct nurses and attendants; the few registered nurses on duty cannot hope to train nurses and attendants during the pressing routine activities of the busy day.

The truth would seem to be that our state hospitals, worth as property many millions of dollars, and operated at an annual outlay of probably more than two millions of dollars, remain largely custodial institutions, to which more than three thousand patients are sent under mandate of the law of commitment every year. All the more than three thousand patients are sick in mind—either mentally disordered or chronically intoxicated upon alcohol or other drugs. It would seem reasonable to suppose that many of the committed patients may be sick also in their physical bodies, and that the mental disorder may be sometimes one of the reflections of the physical disease. Disease of the kidneys, of the circulatory apparatus, of the spleen and of the gastrointestinal tract is often accompanied by mental involvement. Brain tumor and other abnormalities of the brain are not unusual as causative factors in mental affections. How can so large a number of patients be handled diagnostically by so few physicians, and without the help of the keen observations

of well-trained nurses? The nurse's observations and records are generally made use of in diagnostic work in the general hospital. How can therapy be conveyed from the most learned physician to the patient by the uneducated, uncultured, medically ignorant nurse or attendant?

Have the young physicians who are constantly being added to the medical staffs of our state hospitals previously had any training in psychiatry? If not, why not? How can a physician without psychiatric knowledge make a psychiatric examination or proffer to a patient psychotherapy—the only purposes for which the state hospitals exist? The fact that the Hospital Board went all the way to New York to find a superintendent for the Southwestern State Hospital at Marion would tend to indicate that their survey of the fifteen or twenty assistant physicians now engaged in our state hospitals found none competent to head the hospital at Marion, though some of the assistants have been in that service for many years. Whose is the fault that during that time they were not receiving training in psychiatry and in hospital administration? A disservice has been rendered them and the state. Whose is the fault? Within the last generation psychiatry has developed as a special branch of medical discipline. Why have those young men on the medical staffs of our state hospitals been denied training in modern psychiatry? If the fault is not theirs, but ours, it is a grievous fault. Why has not training in psychiatric nursing been proffered some of the splendid young women of Virginia, either under- or post-graduate? Whose is the fault? Why have our state hospitals remained largely custodial institutions? Why are they not hospitals? The fault lies not with the superintendents and their assistant physicians; not with nurses and attendants; not with the Hospital Board; yea, not even with the members of the General Assembly. We, the citizens of Virginia, and we, especially, the physicians of Virginia are largely responsible for the low state of psychiatry in Virginia. We must realize that the person who is mentally sick is neither possessed nor cursed, but sick, and, therefore, a responsibility of modern medicine, and entitled to the best that the science and the art of medicine has to offer.

Why should not some of the state hospitals maintain training schools for nurses? Why should the nurses be obliged to live in rooms on the wards with patients? Why should not the nurses of each hospi-

tal be provided with a Nurses' Home in which to live? Are all patients admitted to the state hospitals promptly and thoroughly examined, and are such examinations uniform in the various institutions and are they carefully recorded? Why should not the nursing on all the wards, both for men and for women, be placed under the supervision of graduate nurses? Graduate men nurses with psychiatric experience are also available. Why should not the assistant physicians have the opportunity, the encouragement, and the facilities for the study of modern psychiatry? Should not each superintendent have a Clinical Director, trained in psychiatry, competent to make a complete examination, physical and mental, and to instruct his associate assistants in psychiatry? Such a set-up would attract to the state hospital service desirable young physicians, because it would give them the chance to learn psychiatry and it would also fit them for advancement.

Every major activity of the Commonwealth save mental medicine has a definite head. The highway work is not headless, nor is education, nor agriculture, nor even the state's sale of liquor. Why does the state's activity in psychiatry function in five or six separate units, more or less uncoordinated, and often perhaps ignorant each of the other's activity? Does not the state's work in mental health need a trained single head, a Commissioner of Mental Hygiene, who would capitalize the state's thought and work in psychiatry—in the state hospitals and out of them? Such a physician would have to be trained not only in general medicine, in psychiatry, in state hospital administration, but he would need to be possessed also of those qualities thought of as belonging to medical statesmanship. For upon him would rest the responsibility of coordinating and unifying and medicalizing all the activities relating to the care of the mentally sick, and of bringing the people, medical and lay, to understand that sickness of mind is no more rare and no more disgraceful than sickness of body, and often no more difficult to heal. Is it not the urgent duty of us physicians to insist that psychiatry in Virginia be taken over by the physicians of Virginia? How can lay people either treat the mentally sick or administer hospitals for the mentally sick? Why should the attempt be continued, an everlasting futility, to separate mental medicine and physical medicine? The person who is physically sick is also mentally sick. The person who is mentally sick is often only

physically sick. Why should not a Director of Health head the state's activities in medicine, with a Commissioner of Physical Health exercising immediate oversight of the frankly physical problems and a Commissioner of Mental Hygiene exercising himself about the psychiatric problems of the Commonwealth?

The discussion of the findings and the recommendations of surveys constitutes merely an evasion of civic and medical duty to our mentally sick folks. We know that what they need is to have brought to them wherever they may be in the state the helpfulness of modern medicine through the medium of trained physicians and trained nurses. Sick folks and those skilled to examine them and to treat them constitute a hospital. Adequately trained doctors and nurses will insist upon the possession of the other necessary facilities. But the emphatic necessity in ministering to the sick is scientific knowledge, adequate in quality and sufficient in quantity. Do our state hospitals have it?

X.

An English Opinion.

A British surgeon, presumably in private practice and possessed of his right mind, recently wrote the following concerning socialized medicine:

Medicine even now is still mainly confined to the treatment of the sick. It will concentrate more and more in the future on the prevention of illness. More and more also will the State interfere with the freedom of the sick man to infect his family, his friends and neighbors with his diseases. Instead of sympathy he will receive punishment if he disobeys instructions. Medicine tends more and more to be a matter for the State rather than the individual; and the doctor in consequence is gradually becoming a State official. As schemes of insurance are devised for people of the middle classes, the general practitioner will become still more of an official. In Russia already there are no private practitioners; medicine is a State service, and our medical world is watching with the greatest interest the results of this vast experiment. For we know that the voluntary hospitals in England are finding it harder and harder every year to make ends meet, and we feel that some form of State subsidy is bound to come sooner or later. That will mean that even the Harley Street consultants will become State servants, for subsidy means control and no one will work on a hospital staff without payment, if the hospital is controlled by the State.

One wonders if our medical cousins across the Atlantic who so valiantly disputed the innovations of Lloyd George two decades ago have now alto-

gether given up the fight against the change that has come to medicine.

Human Life and The Legislature.

Less than a year ago the New York Legislature appropriated \$400,000 for a pneumonia control program in that state. That is a lot of money for even such a wealthy state as New York to devote to a single health project.

A request for funds for the same purpose is now before the Virginia Legislature but the request is much more modest. It arises jointly from the medical profession of Virginia through its Pneumonia Commission and from the Director of Public Health, Dr. I. C. Riggan, who desire to make possible in Virginia an effective pneumonia control program such as is now being launched in many of our more progressive states.

Such a program must be headed up by a Director of Pneumonia Control with office in the Department of Health. It necessitates regional typing stations strategically located over the state in which types of pneumonia may be determined quickly from specimens of patients' sputum. It implies means for making available type specific serum for victims of pneumonia who are suitable to this type of therapy. To repeat: a successful pneumonia control campaign in Virginia means regional typing stations, anti-pneumococcus serum within the financial reach of all pneumonia patients, and some central authority supported by the medical profession of the state.

We have just learned how effective such a pneumonia control program may prove. Similar attacks have been made upon smallpox, tuberculosis and diphtheria with results we are ever ready to applaud. Pneumonia is the second ranking cause of death in Virginia. About half of pneumonia is of the lobar type. More than 90 per cent of lobar pneumonia is due to the pneumococcus. Against the pneumococcus we now have sera that are useful in the majority of cases. A properly treated case of lobar pneumonia has twice the opportunity for recovery with serum as without it. Serum therapy has halved the mortality from lobar pneumonia.

Halving the mortality from lobar pneumonia is a goal worth striving for. Giving a pneumonia victim a 50 per cent better chance to recover is an object worth the attention even of a busy legislator,

for he may himself be the next victim. Lobar pneumonia kills about one-fourth its victims. It kills them quickly. It is no respecter of persons. Although it occurs in all ages it is more fatal the older we grow.

Serum when properly given produces one of the miracles of medicine. The earlier given the more certain the result. Administered within the first twenty-four hours of the disease it reduces the pneumonia mortality to less than 5 per cent.

These figures speak for themselves. It is confidently expected that the Legislature will make the appropriation requested by the Director of Public Health and thus give Virginia a pneumonia control program creditable to the state and life saving to its citizens.

A Book Worth Having.

In *The Physician's Business* recently published by J. B. Lippincott & Co., a New York otolaryngologist, Dr. George D. Wolf, discusses the practical and economic aspects of medicine in some fourteen carefully prepared chapters. An enumeration of these chapters gives some idea of the scope of this extremely valuable book. Beginning with a discussion of the hospital internship, methods of appointment, choice of hospital and types of service, the author proceeds to present in a factual way the demands and compensations of the various medical

careers other than private practice. A chapter is devoted to specialization, another to localization, another to professional contacts. The doctor and his patient, his records, his fees, his instructions to patients, the planning and equipping of an office, office personnel, various office techniques, the selection and care of instruments, forensic medicine, the income tax, insurance, and finally a discussion of certain obvious trends in medical practice constitute the divisions of the remaining material. It is a book which should prove highly valuable to one beginning the practice of medicine and it can be read with profit even by those who have passed into that professional period called by Sir William Osler "the cake and ale" stage.

An Open Forum.

In its department devoted to correspondence the VIRGINIA MEDICAL MONTHLY offers an open forum to the profession of Virginia. Whenever there are questions to be asked, information to be passed on, points of view to be presented, arguments to be maintained this column is at their disposal. From time to time we have the pleasure of publishing a letter of great interest here, and discriminating readers never fail to sample the column's wares. We can assure the contributors that many readers find it one of the journal's most interesting and helpful departments.

Department of Clinical and Medical Education of the Medical Society of Virginia

Obstetrics and Gynecology.

During the month of December, 1937, Dr. Shamburger conducted a postgraduate course for the doctors of Amherst and Nelson counties. Meetings were held twice a week at Amherst and Lovingston. The following doctors were in attendance:

| | |
|--------------------|---------------------|
| Dr. H. E. Clark | Dr. F. M. Horsley |
| Dr. H. G. Dickie | Dr. Edward Sandidge |
| Dr. E. C. Kidd | Dr. R. N. Hillsman |
| Dr. S. G. Miller | Dr. R. B. Ware |
| Dr. B. F. Randolph | Dr. J. A. Drake |
| Dr. D. C. Wills | Dr. J. F. Thaxton |
| Dr. A. A. Sizer | |

Pediatrics.

As was previously announced, Dr. Robert B. Hightower, of Mississippi, assumed his duties as postgraduate instructor in Pediatrics on December 1. Since that time he has familiarized himself with the program of postgraduate medical instruction in Virginia and consulted members of the committee on child welfare in preparation for his work. Dr. Hightower is a graduate of the University of Virginia Medical School. Following his graduation he served internships in pediatrics in the University of Virginia Hospital, the Children's Hospital of Boston, and the Babies Hospital of New York. More re-

cently he has served as instructor in pediatrics and child hygiene in the Harvard Medical School and School of Public Health.

Beginning on January 3, Dr. Shamburger and Dr. Hightower have been engaged in a combined course in Pediatrics, Obstetrics and Gynecology in Fairfax, Fauquier and Culpeper counties. Meetings are held on Monday evenings at Fairfax, Thursday evenings at Warrenton, and Friday afternoons at Culpeper. During other hours the two instructors are engaged in consultations by the doctors of these areas.

Future Circuits.

It is very likely that the entire State of Virginia will have been covered by Dr. Shamburger at the end of the fiscal year, July 1. Since it is doubtful whether postgraduate courses in Obstetrics and Gynecology will be so easily available after that date, local societies that have not already had such a course should arrange at once for a spring circuit. A schedule for the remainder of the year is now being prepared for both Dr. Shamburger and Dr. Hightower. Societies wishing to be included should communicate at once with the Executive Secretary.

GEO. B. ZEHMER,
Executive Secretary.

Proceedings of Societies

The Virginia State Board of Medical Examiners.

At the December meeting of the Board, the following doctors were licensed to practice medicine in Virginia, more than half being by reciprocity:

Dr. James C. Allen, Philadelphia, Pa.
Dr. Donald N. Ball, Sunbury, Pa.
Dr. W. B. Barton, Stonega.
Dr. Joseph Bernstein, Washington, D. C.
Dr. Earle G. Brown, Arlington.
Dr. Charles W. Dorsey, Lewisburg, W. Va.
Dr. Herbert Duncan, Clintwood.
Dr. William Meade Feild, Petersburg.
Dr. Julius Fogel, Washington, D. C.
Dr. C. A. A. Gordon, Williamsburg.
Dr. James L. Greene, Portsmouth.
Dr. Leo I. Hallay, Middlesboro, Ky.
Dr. D. O. Helms, Pocahontas.
Dr. M. A. Honigman, Moseley.
Dr. Zdenka A. Hurianek, Staunton.
Dr. Herman P. Hyder, Seat Pleasant, Md.
Dr. Julian Bay Jacobs, Washington, D. C.
Dr. H. W. Kinderman, Northumberland County.
Dr. Theodore Maisel, Richmond.
Dr. Wallace Henry Malan, Dublin.
Dr. Raymond Maret, Occoquan.
Dr. S. C. McKinney, Washington, D. C.
Dr. Arthur V. Mitchell, Washington, D. C.
Dr. Paul L. Phillips, Hartford, Conn.
Dr. David McK. Pipes, Richmond.
Dr. Richard H. Price, Alexandria.
Dr. Luther A. Riser, Sedgfield, N. C.
Dr. E. M. Rucker, Durham, N. C.
Dr. Ignatius Rutkoski, Arlington.
Dr. W. L. Sibley, Rochester, Minn.

Dr. A. A. Simon, Caldwell, N. J.
Dr. Joseph S. Thomas, Washington, D. C.
Dr. A. K. Wilson, Norfolk.
Dr. William L. Wingfield, Richmond.
Dr. W. W. Zimmerman, III, Waynesboro.

The next meeting of the Board will be held June 22-24.

The Accomac County Medical Society,

At its annual meeting in December, elected Dr. John W. Robertson of Onancock president, and Dr. J. Fred Edmonds of Accomac as secretary. Dr. Robertson has been secretary of this organization for a number of years.

The Albemarle County Medical Society,

At its meeting on January 6, elected Dr. Arthur M. Smith, president, and Dr. Frank D. Daniel, secretary-treasurer. Both officers are of Charlottesville.

The Arlington County Medical Society

Held its regular meeting on Thursday, January 20, at the Washington Golf and Country Club. The guest speaker of the evening was Dr. William J. Cusack, of Washington, D. C., Associate Professor of Gynecology at Georgetown Medical School. He presented a scholarly and informative paper on "The Relation of the Endocrines to Menstrual Irregularities". The paper was ably discussed by Drs. Sutton and Dardinski. Following the meeting a buffet lunch was served.

Dr. Charles F. Kincheloe of East Falls Church is president of this society and Dr. Vincent J. Dardinski of Arlington, vice-president.

HENRY L. BASTIEN, M. D.,
Secretary.

The Lynchburg Academy of Medicine

Met in regular session January 3, with the President, Dr. J. W. Davis, Sr., presiding. The new officers for 1938 were installed as follows: Dr. Elisha Barksdale, president; Dr. S. E. Oglesby, vice-president; Dr. Clarence E. Keefer, secretary-treasurer. The program consisted of the presentation of an interesting patient with "Myasthenia Gravis" by Dr. E. G. Scott, a case report of "Cholelithiasis" by Dr. W. T. Pugh, and two reels from Davis & Geck, Inc., on Cholecystectomy, which was discussed by Drs. J. W. Devine and D. P. Peters.

The Northampton County Medical Society

Held its regular quarterly meeting on January 6, at which time reports were given on the Roanoke meeting of the Medical Society of Virginia, by Dr. J. W. Jackson, delegate, and Drs. J. M. Lynch, J. R. Hamilton, G. W. Holland and J. N. Dudley, all of whom were in attendance and stated that the session was of unusual interest. As evidence of the esteem of the Society, it was voted to continue Dr. E. W. P. Downing as an active member, exempt from the payment of dues, in consideration of the fact that he had practiced in that county for more than fifty years.

Election of officers resulted as follows: President, Dr. J. W. Jackson of Machipongo; vice-president, Dr. W. J. Sturgis of Nassawadox; secretary-treasurer, Dr. W. Carey Henderson, (re-elected), Nassawadox.

Dr. R. DuVal Jones of Norfolk presented an excellent and comprehensive paper on "The Early Diagnosis of Carcinoma of the Colon", and Dr. J. N. Dudley reported on the work of the prenatal clinic for indigent patients in the county.

It was also arranged for a clinic to be held under the direction of Dr. Johnson, a young colored physician of Cape Charles.

Norfolk County Medical Society.

Dr. H. C. Bazet, professor of Physiology in the University of Pennsylvania Medical School, was

the special guest of the President, Dr. Frank H. Redwood, at the meeting of this Society on November 8, and gave a most interesting and instructive address on "Physiological Aspects of Hypertension."

At the business meeting in December, the address of Senator Lewis before the last meeting of the American Medical Association was made the order of business and, after full explanations by Dr. W. B. Martin and others, the resolution adopted at the recent meeting of the Medical Society of Virginia was unanimously endorsed and instructions given that a copy be sent to each representative of Virginia in Congress.

On January 10, Dr. Arthur M. Shipley, professor of Surgery in the University of Maryland, delivered a most excellent address on "The Diaphragm as a Surgical Problem", before an unusually large attendance of members and guests. Immediately following the lecture, the local alumni of the University of Maryland were hosts at a reception in the Town Club, in honor of Dr. Shipley, to which were invited the members and guests.

Richmond Academy of Medicine.

At the meeting on January 11, the officers for 1938 were installed and the scientific program was held under the presidency of Dr. A. I. Dodson. This included a case report by Dr. T. Dewey Davis and papers on "The Use of Turnbuckles in Fractures of the Pelvis" by Dr. R. D. Butterworth, and on "The Cure of Syphilis" by Dr. Kinloch Nelson.

Dr. Nathan Bloom presented a case report at the meeting on January 25, and was followed by Dr. C. C. Coleman with a paper on "Neurological Aspects of Low Back Pain", and by Dr. Carrington Williams who spoke on "The Etiology of Malignant Tumors". The usual buffet supper followed both meetings.

The annual dinner meeting of the Section on the History of Medicine will be held on Tuesday, February 8, with Lt. Col. Edgar Erskine Hume, distinguished editor, author, librarian and military surgeon, as the guest of honor. He will give the address on the Walter Reed Lectureship at the regular meeting of the Academy later that evening, which will be open to all members and visitors.

The Roanoke Academy of Medicine

Held its first meeting of the year on January 3, at which time the following scientific program was presented: The Electrocardiographic Diagnosis of

Cardiac Infarction by Dr. J. E. Gardner; Fissure in Ano by Dr. W. L. Powell, and The Prognosis in Syphilis by Dr. W. W. S. Butler.

Dr. H. H. Wescott is president of the Academy and Dr. C. T. Burton, secretary-treasurer.

The Warwick County Medical Society

Held its annual meeting on December 14, at which time Dr. R. T. Pierce and Dr. F. N. Thomp-

son, both of Newport News, were elected president and secretary, respectively, for the ensuing year. At this meeting the subject of "Group Hospitalization" was discussed by Dr. Lewis E. Jarrett, superintendent of the Medical College of Virginia Hospitals, Richmond, and by Dr. Walter B. Martin of Norfolk. Following the program there was a banquet attended by forty-four members and guests.

News Notes

Tri-State Medical Association of the Carolinas and Virginia.

Dates for the annual meeting of this association are February 21 and 22, with headquarters at Grove Park Inn, Asheville, N. C. Dr. Howard R. Masters, Richmond, is president, and Dr. James M. Northington, Charlotte, N. C., secretary. Interesting clinics and papers will be presented and this meeting promises a great deal of pleasure and interest for those who attend.

Opportunity for Physicians to Tour America.

The approaching meeting of the American Medical Association in San Francisco, June 13 to the 17, offers a splendid opportunity for a tour of the United States both going and returning. The cooperation of more than twenty-five state medical societies has made it possible to arrange a special train tour which will include such outstanding highlights of the North American continent as the Indian Detour, the Grand Canyon, Los Angeles, Riverside and Santa Catalina Island—on the way out to San Francisco. A choice of two return routes is possible, one of which visits the charming cities of Portland, Seattle, Victoria and Vancouver and the beautiful scenic spots of the Canadian Rockies; the second route travels via Yellowstone National Park, Salt Lake City, Royal Gorge, Colorado Springs, and Denver.

There is an all-inclusive price for this tour which includes transportation from home-town, to home-town, though the tour starts officially at Chicago on Monday, June 6, from which point an American Express escort joins the group, as this travel company has been appointed transportation agent and the business details of the trip are in their capable hands.

Those who wish to combine attendance at the Convention with an interesting journey and a happy vacation will be interested in the details of this plan and may receive full information from the American Express Travel Service, 1414 F St., N. W., Washington, D. C.

Married.

Dr. William S. Lloyd, recently of Bumpass, but now located at Goochland, and Miss Barbara Anderson of Buckner, November 15.

Dr. James Davis Hagood of Clover and Mrs. Wirt Jordan Irby of South Boston, January 18.

Dr. Albert E. Long, University of Virginia, class of '35, and now at the University Hospital, and Miss Lois Nichols of Lynchburg, recently on the nursing staff of the University Hospital, December 27.

Dr. James Talton O'Neal, class of '35, Medical College of Virginia, now of Columbus, Ga., and Miss Nadine Julia Clarke of Enfield, January 6.

Dr. Joseph Herman Meadows, Fairmont, N. C., and Miss Leora Mae Compton of Louisa County, December 21. Dr. Meadows is an alumnus of the Medical College of Virginia, class of '34, and his wife is a graduate in nursing of the same school.

To Head Southwestern State Hospital.

Dr. Joseph R. Blalock, psychiatrist of New York City, has been appointed by our State Hospital Board as superintendent of the Southwestern Virginia State Hospital at Marion and entered upon his duties there the first of February. He was born at Wake Forest, N. C., forty years ago, and, after attending the college in that place, studied medicine at Johns Hopkins University, Baltimore, from which he graduated in 1922. Dr. Blalock has for

sometime specialized in psychiatry and comes to this new work direct from the New York State Psychiatric Institute and Hospital, in which place he was senior physician and clinical director.

Health District Personnel Notes.

Dr. James H. Gordon, class of '34, Medical College of Virginia, has been appointed Assistant Health Officer of the Rockbridge-Alleghany-Botetourt Health District with office in Covington, Virginia. Since graduation, Dr. Gordon has held residences at the hospitals of the University of Pennsylvania and the Medical College of Virginia.

Dr. Edward V. Jones, Jr., has been appointed Assistant Health Officer of the Arlington County Health Department with office in Arlington, Virginia.

Dr. John H. Bonner, for some time in charge of the Sussex County Health District, has been made director of the new Hopewell-Prince George County Health District and has entered upon his new duties with headquarters at Hopewell.

Dr. J. C. Moore,

For the past three years located at Clintwood, Va., where he was engaged in private and contract practice, has recently moved to Keen Mountain, Va., where he is doing contract work for the Red Jacket Coal Company at that place, and for the Oakwood Smokeless Coal Company of Hangar.

Diagnostic Tumor Clinic.

A group of doctors in Norfolk opened the Diagnostic Tumor Clinic at 306 West York Street on January 19, the purpose being to provide group diagnosis and outlines of treatment in keeping with similar groups which have been established throughout the United States and Canada. The clinic will be held each Wednesday from 9 to 11 a. m. Cases will be carefully examined, a biopsy made when necessary, and patients will be returned to their physicians with suggestions as to proper treatment. The clinic will try to provide treatment for indigent patients but will make a charge of \$5 to \$10 for private patients who are able to pay.

Post-Graduate Clinic.

The George Washington University Sixth Annual Post-Graduate Clinic will be held at the University Medical School and Hospital for one day only, February 19, 1938. There will be a symposium on

heart disease with eight papers stressing the latest developments in the field of cardiology and peripheral vascular diseases in both their medical and surgical aspects. In addition there will be pathological, physiological and clinical demonstrations.

The afternoon session will be devoted to the presentation of several lectures on interesting subjects in psychiatry, pharmacology, medicine, surgery, and obstetrics.

Virginia Neuropsychiatric Society.

The fall meeting of this Society was held at the Central State Hospital in Petersburg, on November 5, with the President, Dr. Finley Gayle, Richmond, presiding. The guest speaker was Dr. Patrick Henry Drewry, White Plains, N. Y., who gave a paper on "Some Observations in Insulin Shock Therapy". Others on the program were Dr. G. B. Barrow, Staunton; Drs. Rex Blankenship, James Asa Shield, and W. G. Crutchfield, of Richmond; and Drs. T. L. Gemmill and H. L. Dean, of Petersburg.

The first 1938 meeting of this organization was held at the University of Virginia on January 26. The scientific program was presented by the following, all of the University: Dr. S. G. Bedell, Dr. H. P. Newbill, Miss Steele Houghins, Dr. J. M. Meredith, Dr. Dudley C. Smith, Dr. J. M. Hitch, and Dr. D. C. Wilson.

Dr. Thomas N. Spessard, Roanoke, is secretary of the Society and there are about forty members at this time.

Dr. E. G. Gill,

Roanoke, sailed on *The Queen of Bermuda* on January 15 and will visit Havana, Port-Au-Prince, Haiti, Trujillo City and San Juan before returning home. This cruise is being sponsored by the Pan-American Medical Association, before which Dr. Gill will present a paper on "The Management of Organic Foreign Bodies in the Trachea and Bronchi of Children."

Dr. Edward V. Valz,

Formerly of Staunton, has recently retired from the Medical Corps of the U. S. Navy, after thirty years' service, and is now residing at 7112 Lincoln Drive, Mt. Airy, Philadelphia, Pa.

New Director of Medical College Clinic.

Dr. David S. Garner, formerly assistant superintendent of the hospital division of the Medical Col-

lege of Virginia, has been appointed to the directorship of the new out-patient clinic of the College. He is a native of Northumberland County and a graduate of the College in 1933, following which he served a three-year internship at the school hospitals.

News From University of Virginia, Department of Medicine.

On January 10, Dr. R. M. Bradley spoke before the University of Virginia Medical Society on *Reminiscences of a Roaming Doctor*.

On December 10, Dr. J. Edwin Wood gave an address before the Heart Association, meeting in Washington, on *Rheumatic Fever*. On December 20, he spoke before the Peninsular Medical Association in Newport News on the subject of *Hypertension in the Late Toxemias of Pregnancy*.

On January 6, Dr. Henry B. Mulholland spoke before the Albemarle County Medical Society on *The Treatment of Pneumonia*. On January 7, he addressed the Martinsville Medical Association on the subject of *Sulfanilamide*. On January 21, he spoke before the Nansemond County Medical Society, meeting in Suffolk, on the subject of *Advances in Therapy*.

At the meeting of the University of Virginia Medical Society on January 24, Dr. C. R. Robins, Sr., gave an address on the subject of *A Cure of Direct Inguinal Hernia*. Dr. J. H. Scherer spoke on *Reticulocytosis in Differential Diagnosis of Jaundice*, and Dr. Carrington Williams discussed *Syphilis of the Gastro-Intestinal Tract*.

News Notes from Duke University School of Medicine.

In December, 1937, the Duke University Medical Society was organized to facilitate the presentation of current medical problems before the students, the staff and other interested persons in the University and professional community. Meetings are held monthly during the academic year, and the programs usually consist of short case presentations and discussions followed by a description of some staff or student research project. Occasionally, guest speakers from other institutions are invited to participate in the programs. The first meetings was held December 7, at which Dr. Wiley D. Forbus gave the introductory talk, and Dr. D. T. Smith spoke on "*Experi-*

mental Canine Blacktongue." At the second meeting, held January 11, Dr. W. G. Wyckoff, of the Rockefeller Institute, Princeton, N. J., was the guest speaker, his subject being "*The Ultra-centrifugal Study of Macro-molecules*."

On January 10, Dr. James S. Plant, director of the Essex County (Newark) Juvenile Clinic, under the auspices of the Family Welfare Association of Durham, spoke at the armory-auditorium on "*The Mental Hygiene Approach to Life*."

Dr. Clarence W. Trexler,

Class of '26, University of Virginia Department of Medicine, who has been practicing for several years in Honolulu, has been elected a fellow of the American Academy of Ophthalmology and Otolaryngology. Dr. Trexler is also at this time president of the Honolulu Lions Club.

Dr. P. G. Hamlin,

Recently at Newport News, Va., but who has been engaged for a number of years in neuro-psychiatric work, has just been transferred from the Crownsville State Hospital at Crownsville, Md., to the Eastern Shore State Hospital at Cambridge, Md., where he is first assistant physician.

The Tidewater Memorial Hospital,

Located near Lynnhaven, on the Virginia Beach Boulevard about half way between Norfolk and Virginia Beach, was opened to patients on December 27, 1937. It was built by funds raised by voluntary contributions throughout the second congressional district and, though intended primarily for the care of far advanced cases of pulmonary tuberculosis, it will as far as possible admit all tubercular patients of that district who may apply. The hospital has a capacity of fifty beds, thirty-four for white and sixteen for colored patients, the white paying at the rate of \$1.00 per day and the colored seventy-five cents. Miss Bethea Craft is superintendent and Dr. Elizabeth Cole of Norfolk is acting as medical director. The hospital is managed by a group of men and women selected from the entire district and has a medical advisory board of physicians, two being selected from each city and each county in the district.

Dr. Louis De Angelis,

Who served his internship at the Lawrence and Memorial Associated Hospitals, of New London,

Conn., following his graduation from the Medical College of Virginia in 1936, announces the opening of his office at 252 Montauk Avenue, that city, where he is engaged in the general practice of medicine.

Birth Announced.

Dr. and Mrs. Charles Henderson of Norton announce the arrival of a son, Charles Henry, III, December 18, 1937. Mrs. Henderson was formerly Miss Mary Virginia Chiles, N-30, Medical College of Virginia.

Doctors Active in Waynesboro Kiwanis Club.

The following doctors are among those serving on committees in the Waynesboro Kiwanis Club for the present year: Drs. A. M. McLaughlin, H. T. Hawkins, B. K. Weems, Lyle S. Booker and J. F. Hubbard.

Dr. J. Edwin Wood, Jr.,

Professor of the Practice of Medicine at the University of Virginia, spoke before the Washington Heart Association on December 10, and before the Virginia Peninsula Academy of Medicine on December 20.

Dr. Frederick P. Fletcher,

Richmond, has been appointed by Dr. G. F. Simpson, president, as the representative from the Medical Society of Virginia on the Virginia Welfare Council.

Dr. J. M. Hurt,

Blackstone, has been named a member of the board of directors of the Blackstone Bellefonte Club for the year 1938.

Dr. Herbert C. Jones,

Petersburg, has been elected as one of the new directors of the Chamber of Commerce of that place.

Dr. S. B. Perry

Has been installed as one of the new directors of the Hopewell Kiwanis Club for the present year.

Dr. Hugh B. Magill,

Recently director of the Hanover County Health Unit, has located at Tappahannock for the practice of general medicine.

The Southeastern Surgical Congress

Will hold its ninth annual assembly in Louisville, Kentucky, March 7, 8, and 9, at the Brown Hotel.

The tentative program lists many prominent doctors from the United States and Canada. Two Virginians, Drs. C. C. Coleman, Richmond, and C. C. Smith, Jr., Norfolk, will present papers. The completed program will be mailed out the latter part of February.

For further information, write Dr. B. T. Beasley, secretary-treasurer, 701 Hurt Building, Atlanta, Ga.

Interesting Broadcast.

The readers of the MONTHLY will perhaps be interested in the radio dramatization of the life of that widely loved American poet, humorist and physician, Oliver Wendell Holmes. This is to be broadcast over the national network of the Columbia Broadcasting System on Wednesday, February 9, from 8:00 to 8:30 P. M., EST. This program is by "Cavalcade of America."

Dr. Joseph W. Houck

Has located in Richlands where he is in charge of surgery at the new Clinch Valley Clinic Hospital, which opened January 1 with a one hundred-bed capacity. Dr. Houck is a graduate of the University of Virginia Medical School in 1931.

Petersburg Hospital Staff.

At a meeting early in January, Dr. D. D. Willcox was elected president of the Medical Staff, succeeding Dr. Leta J. White. Other officers elected at this time are: Dr. H. M. Snead vice-president; Dr. H. Cantor, secretary; Dr. F. N. Taylor, vice-secretary; and the following chairmen of sections, Dr. J. D. Osborne, X-ray; Dr. W. B. McIlwaine, medical; Dr. George Reese, surgical; and Dr. J. E. Hamner, eye, ear, nose and throat. Dr. Herbert C. Jones was named member of the medical committee of the board of directors and Dr. Wilbur M. Bowman member of the chart committee.

The American Physicians' Art Association,

A national organization of medical men who have ability in the fine arts, will hold a *first national exhibition* in the San Francisco Museum of Art, San Francisco, California, in June, 1938. (The American Medical Association Convention is June 13-17 in the same city). The Art Association, which already has an outstanding membership, has three classifications for members—active, associate, and contributing. The *first annual exhibition* promises to be of unusual interest with entries to

be accepted (after jury selection) in the following classifications: oils, watercolors, sculpture, photography, pastels, etchings, crayon and pen and ink drawings (including cartoons), wood carvings and book bindings. Scientific medical art work will not be accepted. The exhibition is not limited to first showings. All entries close April 1, 1938. Any physician interested should communicate at once with the Secretary of the American Physicians' Art Association, Suite 521-536 Flood Bldg., San Francisco, California.

Dr. Walter J. Otis,

New Orleans, La., class of '15, Medical College of Virginia, has just been elected chairman of the Hospital Council of New Orleans, an organization of hospital executives of that city. Dr. Otis was also recently elected a member of the board of directors of the Hotel Dieu medical staff, for the ensuing year.

Dr. J. Newton Dunn,

Class of '31, Medical College of Virginia, has taken over the office of the late Dr. John C. White at Blackstone for the practice of medicine in that place. For the past three years Dr. Dunn has been in Utah, where he was connected with C. C. C. work.

Dr. Ennion S. Williams,

Richmond, has been appointed acting medical director of the Life Insurance Company of Virginia, and is to take over the duties previously performed by the late Dr. Charles L. Rudasill, to whom he was assistant medical director.

Commander Micajah Boland,

Medical Corps, U. S. Navy, retired, who has been attending clinics and doing post-graduate work in diagnosis and internal medicine in New York for several months, has recently been appointed on the medical staff of the New York 1939 World's Fair. He will spend the month of February in Virginia before assuming his duties at the Fair in March.

Obituary Record

Dr. Joseph Peterfield Trent,

Prominent physician of Farmville, died at Warrenton, December the 27th, as the result of injuries received in an automobile accident on Christmas day, while en route to Washington, D. C., for the

holidays. Dr. Trent was a native of Nottoway County and seventy years of age. His medical education was received at George Washington University in Washington, from which he graduated in 1906. After this he practiced for a time in Washington and in West Virginia before locating in Farmville about twenty years ago. He had been a member of the Medical Society of Virginia since returning to this State. For several years he had been a surgeon for the Norfolk and Western Railway. Dr. Trent is survived by his wife, a son, and several sisters.

Dr. William Evans,

Age seventy, a native of Westown, Orange County, New York, and graduate of the College of Physicians and Surgeons, New York City, 1890, but who has been practicing in Norfolk since 1902, died at his home in that city December 26, 1937, after a long illness.

He was a member, medical examiner, and officer of many fraternal organizations, and was a Master of Ruth Lodge of Masons in 1922. He was loved and respected by all who knew him. He is survived by a daughter.

The following resolutions were adopted by the Norfolk County Medical Society on the death of Dr. Evans:

WHEREAS, on December 26, 1937, Dr. William Evans passed to his reward; and

WHEREAS, Dr. Evans faithfully served the people of this community, both fraternally and professionally, for many years;

THEREFORE, BE IT RESOLVED: That, in the death of Dr. Evans, the Norfolk County Medical Society has lost a faithful friend, a good physician, and a polished genial member of society.

BE IT FURTHER RESOLVED: That the sympathy of this Society be conveyed to his family, and a copy of these resolutions be published in the VIRGINIA MEDICAL MONTHLY.

P. ST. L. MONCURE,

N. G. WILSON

M. P. DOYLE

Dr. Charles Louis Rudasill,

Medical Director of the Life Insurance Company of Virginia, died at his home in Richmond on January 13th, after a long illness. He was a native of Madison County and forty-seven years old. Dr. Rudasill graduated from the Medical College of Virginia in 1914, and, after serving a year's internship, located in Richmond for practice. The following year he was appointed a member of the medical staff of the Life Insurance Company of

Virginia and in 1925 was named its medical director. During the World War, Dr. Rudasill served as first lieutenant in the Medical Corps, U. S. Army, and saw service in France. He was a member of the local and national medical organizations and had been a member of the Medical Society of Virginia for twenty-three years. His wife and two sons survive him.

Dr. John Cecil White,

Blackstone, Va., died December 31st, following a two-day illness from heart trouble. He was born in Chatham, Va., and was thirty-seven years of age. Upon completion of his academic education, he studied medicine at the Medical College of Virginia from which he graduated in 1927. Before studying medicine, Dr. White taught school in Buckingham County. He located in Blackstone in 1931. He had been a member of the Medical Society of Virginia for several years. His wife and two sons survive him.

Dr. Robert Emmett Chumbley,

Well-known Radford physician, died December 31, having been in ill health for sometime. He was a native of Pulaski County and sixty-four years of age. Dr. Chumbley graduated from the former University College of Medicine, Richmond, in 1898. He was at one time assistant superintendent of the Southwestern State Hospital in Marion but located for practice in Radford in 1918. Dr. Chumbley had been a member of the Medical Society of Virginia for thirty-six years. His wife and two children survive him.

Dr. Marshall C. Fields,

Chilhowie, Va., died October 15. He was a native of Grayson County and sixty-seven years of age. Dr. Fields graduated from the Medical College of Virginia in 1898. He was a Mason and had been a member of the Medical Society of Virginia for thirty-nine years.

Dr. Robert Benton Davis,

Well-known Charles City County physician, died December 23rd, in a Richmond Hospital. He was sixty-two years of age and a graduate of the Medical College of Virginia in 1906. Dr. Davis had practiced in Charles City County, with his home at Holdcroft, since his graduation. He took an active part in county affairs, serving as supervisor and

chairman of the Charles City Democratic Committee, a member of the board of school trustees, and as County treasurer for eight years. Dr. Davis was formerly a member of the Medical Society of Virginia. His wife and three daughters survive him.

Resolutions on Death of Dr. O. A. Ryder.

The Alexandria Hospital, at a meeting on January 10, adopted the following resolutions on the death of Dr. Ryder:

WHEREAS, The Master has removed from our midst our beloved associate, Dr. Oliver Allison Ryder.

BE IT RESOLVED, That in his passing the Alexandria Hospital has lost the services of a skillful physician, a resourceful worker, and a wise advisor.

BE IT FURTHER RESOLVED, That the physicians of the Staff of the Alexandria Hospital have lost a genial companion, helpful associate, and a most valued friend.

BE IT FURTHER RESOLVED, That a copy of these resolutions be spread upon the minutes of the Staff, a copy presented to the family of Dr. Ryder, and that they be published in the *Alexandria Gazette*, the *VIRGINIA MEDICAL MONTHLY*, and the *Journal of the American Medical Association*.

(Signed),

LLEWELYN POWELL, *Chairman*

WILLIAM B. WILKINS, *Secretary*.

Dr. John Decker Butzner,

Of Scranton, Pa., died December 23rd. He was a native of Spotsylvania County, Va., and sixty years of age. Dr. Butzner graduated in medicine from the University of Virginia in 1904.

Dr. William Edgar Darnall,

Well-known gynecologist of the Atlantic City (N. J.) Hospital Association, died December 27th. He was born in Pearisburg, Va., in 1869, and graduated from the University of Virginia, Department of Medicine, in 1895.

Dr. Lawrason Brown,

Prominent tuberculosis specialist and author, died at his home in Saranac Lake, N. Y., December 26, after a long illness, aged sixty-six. He graduated in medicine from the Johns Hopkins University of Baltimore in 1900 and since that time had been connected with Trudeau Sanatorium in many capacities. He had also been the recipient of many honors from medical organizations, among these being the honorary degree of doctor of science from the Medical College of Virginia in 1936.

CANNED FOODS IN THE CONTROL OF SUBACUTE DEFICIENCIES OF THE ANTI-PELLAGRIC FACTOR

As a result of his classical researches, Goldberger first proposed the name "Pellagra-Preventive Factor" for that component of the vitamin B complex which he found effective in the prevention of human pellagra. Subsequently, the terms vitamin "G" and sometimes vitamin "B₂" were used to designate this effective factor. However, until biochemical research has conclusively established its identity, it is now apparent that we had best return to Goldberger's original designation for that entity which protects the human against pellagra.

In contrast to the other vitamin deficiencies, cases of severe deprivation of the anti-pellagic factor are not uncommon in certain regions of the United States. It is also known that if the intake of food be drastically restricted for some reason—alcoholism, for example—pellagra may be encountered in localities in which the disease is not endemic (1). For these reasons, it is not unreasonable to suspect that subacute or latent deficiencies of the P-P factor may also be existent in this country.

In the absence of typical dermatitis, available means for the diagnosis of deficiencies of the anti-pellagic factor are not entirely satisfactory. The practitioner must rely upon a variable group of less specific symptoms such as glossitis, diarrhea, digestive

disturbances, and nervous and mental disorders. However, consideration of these symptoms along with an evaluation of the diet upon which the subject had been maintained, may permit the conclusion that suboptimal intake of the P-P factor should be suspected.

The treatment of severe or perhaps even the mild manifestations of this dietary deficiency may require intensive therapy with food products or preparations known to be rich in the pellagra preventing factor. However, prevention of pellagra and maintenance of the cure appear to be largely matters of dietary regulation. In this connection, commercially canned foods deserve particular mention.

Goldberger and his associates directed considerable attention to evaluation of the pellagra-preventive powers of common foods. The values of foods, many of them canned foods, in the prevention of pellagra have been determined (2) by investigations in which human subjects were used.

In view of these facts, it is apparent that certain commercially canned foods will prove reliable, convenient and economical in the formulation of diets calculated to protect against mild or severe deficiencies of the P-P factor.

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1. 1937. J. Am. Med. Assn. 108, 15.
1935. Ibid. 104, 1377.

2. 1934. U. S. Pub. Health Rpts.
49, 755.

This is the thirty-fifth in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.



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VIRGINIA MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

69th Annual Meeting, Medical Society of Virginia, Danville, October 4-6, 1938

Vol. 65, No. 3
WHOLE No. 1029

RICHMOND, VA., MARCH, 1939

THE N. Y. ACADEMY OF MEDICINE
\$2.00 A YEAR
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Entered as Second Class Matter at the Postoffice, Richmond, Va.

His First Solid Food

The baby's first solid food always excites the parents' interest. Will he cry? Will he try to swallow the spoon? Far more important than the child's "cute" reactions is the fact that figuratively and physiologically this little fellow is just beginning to eat like a man.



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Virginia Medical Monthly

Official Publication of the Medical Society of Virginia

Vol. 65, No. 3
WHOLE No. 1029

RICHMOND, VA., MARCH, 1938

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SOME MODERN PROBLEMS IN SKIN CANCER.

C. AUGUSTUS SIMPSON, M. D.,
Washington, D. C.,
and

FRANCIS A. ELLIS, M. D.,
Baltimore, Md.,
and
Washington, D. C.

The statement, "If one could only find a cure for cancer," is often made. The difficulty today, however, is not finding a cure for malignancy but in getting the patient to the proper physician for early diagnosis and adequate treatment. Today, except for such forms as the lymphoblastomas and some sarcomas which are apparently generalized from the very beginning, cancer in its incipient stages is always amenable to modern methods of therapy. The difficulty in the cure of cutaneous cancer is not the finding of a successful therapeutic agent, but the diagnosing and treating the neoplasms early enough. Education of physicians and laymen in this regard has made marked advancement in the last decades under such able men as the late J. C. Bloodgood and others, but still lags far behind the advances made in treatment.

In 1929 Dr. Bloodgood¹ wrote the following: "Through the education of the public and the profession, cancer of the skin can be eliminated from the mortality sheet of the census bureau." Another way of saying the same thing would be to say that skin cancer is curable by modern methods if the public were educated to avail themselves sufficiently early of the modern therapy. Bloodgood did not ask for better curative agents to wipe out late cancer of the skin or the mortality due to cutaneous neoplasms, but only for earlier diagnosis and proper treatment. He did condemn too conservative treatment.

The American Society for the Control of Cancer,² which is doing much to educate the public, stated in an editorial in June, 1937, "The cure of cancer is to cut it out, while that is still possible." Many

other authorities could be quoted to show that early cancer of the skin is curable by modern methods if the patients present themselves early to properly-trained physicians for efficient treatment.

In a recent report from the Holt Radium Institute of Manchester, England,³ this point was strikingly shown; quote: "In 1933, ninety-three cases of epithelioma of the skin were treated; 70 per cent of these patients were alive at the end of October, 1936. Survival occurred in 80 per cent of the early cases but in only 16 per cent of the

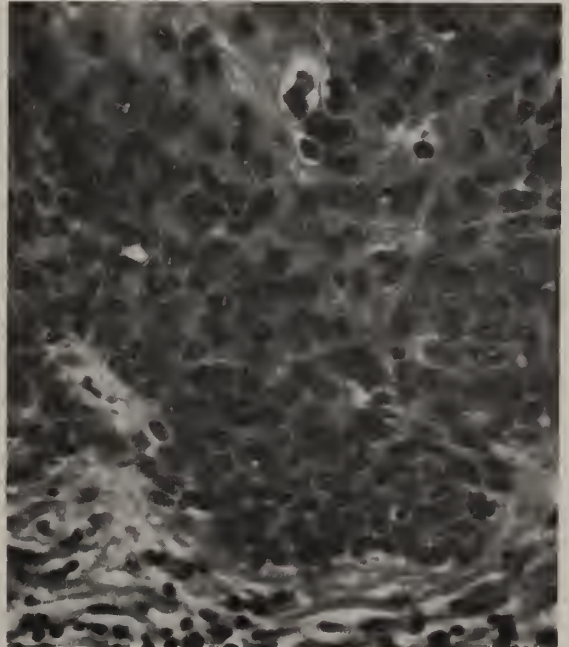


Fig. 1.—Biopsy from L. K. Shows the disarrangement of the rete, individual cell keratinization, mitosis and early penetration of the basal layer.

late cases. It is surprising that only fifty-six (60.2 per cent) of the cases were early, as the disease could readily be seen by the patient in its earliest stages." Just what was considered early cases was not stated, yet this report as well as many others adequately illustrates that in respect to skin neoplasms, the crux of the problem is not the diagnosis, as in internal cancers, nor in therapy, but for the patients to see the doctor for early adequate treatment.

In our⁴ series of the last 500 cases of keratosis and epitheliomas this can also be seen, as shown in Table 1.

| <i>Duration</i> | <i>Epitheliomas</i> | <i>Keratosis</i> |
|---------------------------|---------------------|------------------|
| Less than six months----- | 35% | 22.4% |
| More than six months----- | 65% | 77.6% |
| More than five years----- | 15.4% | 17.2% |

The figures are more than likely inaccurate, but certainly the error is not in the relatively high percentage of early cases because, as every physician well knows, patients for many reasons are apt to answer the question as to duration in shorter periods than the actual duration. Some of the reasons may be: the patient did not actually note the first abnormal changes; memory tends to shorten the time in which important events occurred; the patient questioned has not been given sufficient time to correlate so as to determine the actual duration. Many examples could be cited, but only one will be given. A patient with a lesion which had resulted in an extensive scar in part of the pathological area stated that the changes had been there only one week, while one knows that scarring could not have developed that rapidly. In this case there was no question that the atrophy was an end-result of the destruction of the epidermis by the present lesion.

Why are the duration figures for keratosis, benign and precancerous changes in the skin, so long as malignant changes have not occurred, similar to those of epitheliomas? The answer cannot be that the average patient can differentiate the precancerous from the cancerous conditions, for, indeed, this can only be told at times by histological studies.

A keratosis may be present for a decade or more before becoming malignant, and even basal-cell carcinoma grows slowly, while prickle-cell epithelioma may metastasize in less than six months. Yet prac-

tically all can be cured if treated within the first few months. It is true that many older persons have seborrheic keratosis (senile verruca) for years without malignancy occurring, but such a patient should consult a qualified physician at regular intervals or as soon as any unusual changes occur (preferably the former), and not depend on his own knowledge or on that of some unqualified "authority". If this were done there is practically no reason why patients should die of cancer of the skin.

An example of proper treatment of early malignancy is illustrated by the following case history.

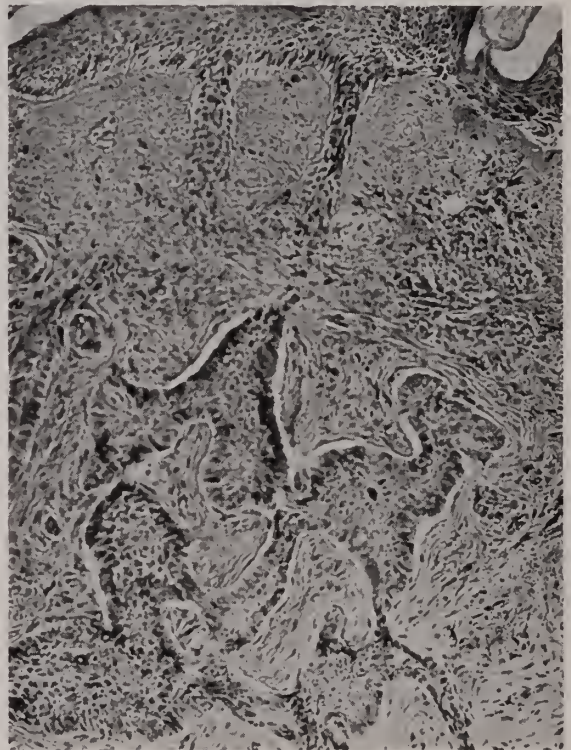


Fig. 2.—H. P. A typical basal-cell epithelioma with much melanin in the outside row of cells. H. and E. stain.

L. K., a white female, aged seventy, was seen daily by one of the authors in his routine life, so that the history and duration can be fairly well vouched for. On the left cheek just below the lower lid there was a two m.m. sized, slightly elevated, conical papule of one month's duration. The lesion clinically was apparently growing rapidly, so the patient was persuaded to have it removed. On December 17, 1935, the area was infiltrated with 2 per cent procain and removed with scalpel for biopsy, and the base was thoroughly desiccated.

Eighteen months later there were no signs of recurrence.

Histological Findings:—There was a moderate hyperkeratosis and parakeratosis. The rete layer was broader than normal, and was disorganized with marked variation in the size of the cells and with some individual cell keratinization; also, many signs of increased cell activity as portrayed by the numerous mitotic figures, and in some areas the basal membrane had been penetrated by individual prickle cells and by small nests of the same type of cells. The cutis was otherwise negative except for slight capillary dilation, numerous rounded cells and marked senile elastosis.

Diagnosis:—Early prickle cell carcinoma.

| LOCATION OF LESIONS ON HEAD AND NECK | | | | | | | | | |
|--------------------------------------|-------------|--------------|------------|------------|------------|-------------|-----------------|--------------|-------------|
| | <i>Neck</i> | <i>Scalp</i> | <i>Ear</i> | <i>Lip</i> | <i>Lid</i> | <i>Chin</i> | <i>Forehead</i> | <i>Cheek</i> | <i>Nose</i> |
| Keratosis | 4.0% | 0.0% | 7.0% | 5.0% | 4.0% | 0.0% | 17.0% | 35.0% | 28.0% |
| Epithelioma | 5.8% | 1.1% | 5.8% | 10.0% | 15.0% | 1.4% | 10.0% | 29.9% | 21.0% |

The locations of cutaneous keratoses and cancers as found in this series are of some interest. Ninety-five and seven-tenths per cent of these lesions were on the exposed part of the head and neck, while 3.9 per cent occurred on the hand (mostly on the dorsum of the hand), so that the total of 99.6 per cent were on the exposed surfaces. The previous ingestion of inorganic arsenic, such as Fowler's solution, acted as a predisposing agent in most of the cases of cancer on the hands. Other lesions were on the tongue, leg, abdomen and chest, in the order named. These figures strikingly show, as already well recognized by the dermatologists, that exposure to light, wind, and the weather generally, plays a causative role in causing the precancerous and cancerous changes in the skin. Perhaps the eight lesions on the tongue should not be included as cutaneous tumors, but they are often seen by the dermatologist for differential diagnosis and treatment. Seborrheic verrucas (keratosis) which occur mostly in the torso and very rarely undergo malignant change were not included in these percentages.

Melanotic Epitheliomas:—That epithelial carcinomas may be pigmented is not generally recognized. Becker⁵ found some pigment in 33 per cent of basal cells, 14 per cent of the intermediate, 9 per cent of the mixed, and 7 per cent of the prickle cell type, giving a mean of 16 per cent for all types. This does not mean that 16 per cent of the epitheliomas were pigmented enough to be discolored

clinically. Touraine⁶ found fifty-five cases reported in the literature in which the pigmentation of epitheliomas was clinically dark. The important fact to be remembered is that even marked pigmentation does not signify increased malignancy, as that depends on the type of cell present and not on the melanin. Metastasis was unusual, growth was rather slow, and there were no cases where the tumors changed to a nevocarcinoma (malignant melanomas). These facts are of some practical importance as the treatment of even deeply pigmented basal-cell epitheliomas is that of any basal-cell tumor, which is far different from that of melanomas.

Gaté and his associates⁷ think that the pigmented

basal-cell epithelial cancer arises from the dendritic cells (melanoblasts) of the basal layer and that they are not more malignant than other basal-cell tumors; consequently, their treatment need not be more radical.

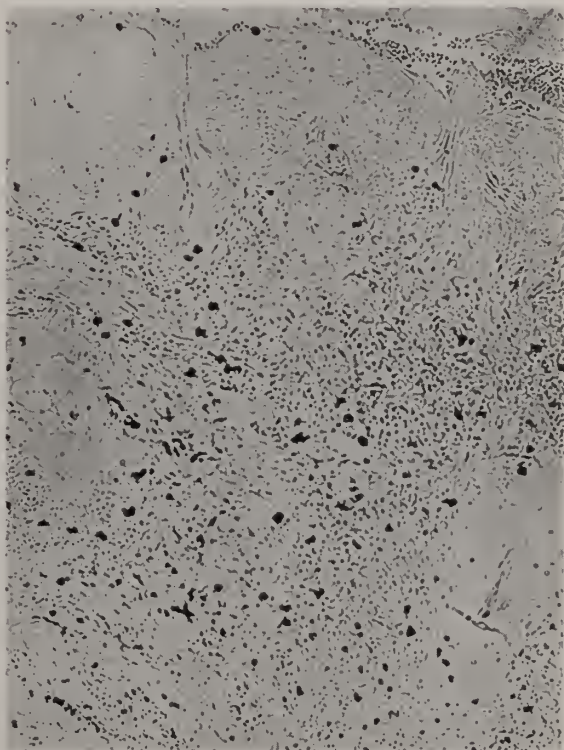


Fig. 3.—Unstained section from H. P. demonstrating that the extensive pigment in the tumor was not confined to nests of basal cells but distributed diffusely throughout the cutis.

Case Report:—H. P., age thirty-one, white female, came in complaining of a three m.m. sized, conical, pearly papule on the lower edge, right side of the jaw, which had been present for three months. It was a non-pigmented, basal-cell tumor, which was desiccated and irradiated. On the left cheek just under the lower lid there was a five m.m. sized, pigmented, lesion of four months' duration. It was non-elevated, deeply pigmented, of a dark slaty hue, and had a very minute rolled edge. In spite of the edge the clinical impression was melanocarcinoma. The pigmented area was removed with a bi-polar cutting current with a five m.m. border, and the area was desiccated farther and then irradiated.

Histological Findings: — The epidermis was atrophic with occasional interpapillary peg. There was a marked degeneration of the elastic tissue. The lesions consisted of well-defined nests of basal cells, most of which contained large amounts of melanin. The pigment was not confined to any particular type of cell, but was also lying free in the cutis and in chromatoblasts. Perles' test for iron was regative. There was a moderate round-cell infiltration with an occasional epitheloid cell.

SUMMARY

Early cancer of the skin is curable by modern methods of treatment. The difficulty is to educate the public so that they will present themselves early for adequate treatment.

If any one dies from or develops late cutaneous cancer today, it means either the patient or the doctor erred by procrastinating or by maltreatment.

An unusual case of pigmented basal-cell epithelioma was presented.

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PAROXYSMAL HEMOGLOBINURIA—WITH REPORT OF A CASE.*

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Paroxysmal hemoglobinuria is a relatively rare disease. McCarthy and Wilson¹ in 1932 stated that less than 300 cases had been reported, and reported the first two cases observed at the Boston City Hospital for a period of at least twenty years. In 1930 Pilot and Friedman found but nine cases from 156,000 admissions to the Massachusetts General Hospital over a period of thirty years, and in 1931 Thurmon and Blain² reported the only three cases from 74,186 admissions to the Peter Bent Brigham Hospital.

The disease is characterized by paroxysms of hemoglobinuria usually following the exposure to

cold in a patient with syphilis. Such constitutional symptoms as chill, fever, pain in the abdomen and over the kidneys, and aching may be complained of accompanying the paroxysms. Usually the most striking evidence of the disease is the passage of dark, red, Burgundy wine-colored urine. The serum of the patients contains an autohemolysin which at low temperature unites with the erythrocytes, and on warming causes intravascular hemolysis. The presence of this hemolysin can be demonstrated by the Donath-Landsteiner reaction, which is accomplished by mixing the patient's serum and his own or another's cells, chilling to around five degrees C. for ten to thirty minutes, and then incubating at thirty-seven degrees C. for one to several hours. Fresh

*Read before the South Piedmont Medical Society, at South Boston, Va., April 20, 1937.

guinea pig serum may be added if there is no complement in the original serum. A positive reaction is indicated by hemolysis of the cells. McKenzie,³ and Thurmon and Blain have demonstrated that the autohemolysin is separate from the Wassermann, Kahn, and Hinton reacting substances.

Paroxysms of hemoglobinuria in susceptible patients may be produced artificially by immersing the feet in ice water for thirty minutes. This is known as the Rosenbach test.

Accompanying such an attack Thurmon and Blain noted temporary enlargement of the liver and spleen and a drop in red count of approximately a million cells. Since the paroxysms are usually associated with the patient's exposure to cold, it is more common for them to occur during the winter months, but they do occur in warm weather.

Therapeutic measures are limited to antisyphilitic treatment and to avoidance of cold. Even though the Wassermann test may not be changed with treatment, the course of the disease may be ameliorated.

CASE REPORT

A nine-year-old male colored child was first seen on November 27, 1936, in the Skin Clinic of the Danville City Health Department, because of a complaint of yellow eyes, and bitter taste in the mouth. He was referred to the Medical Clinic where on December 1, 1936, very little history could be elicited except that for several days he had noticed very dark urine. There had been some nausea, and possibly a little upper abdominal pain. He thought his eyes had been yellow for one to two weeks. He had had no chills.

F.H. Father was living, but was known to have a positive Wassermann. Mother was dead. The husband stated that she had had no miscarriages. The cause of her death could not be determined. One brother was dead. There were no living siblings.

P.H. An adequate past history could not be obtained; however, both the patient and his father stated that on one or two occasions the child had passed dark red urine. One of these episodes had occurred during the summer. There was no history of any significant illnesses. He was thought not to have had malaria.

P.E. The patient was a well-developed and nourished boy. There were no stigmata of congenital syphilis. The sclerae appeared slightly icteric. There

was an enlarged tear sac on the right upper lid. The lungs were clear and heart normal. The liver could not be felt, but spleen was readily palpable. Otherwise the physical examination was negative.

Clinical Notes. The urine freshly voided was of dark, mahogany color; bile negative; albumen large trace; benzidin strongly positive. *Blood:* Hemoglobin 44 per cent (Sahli); erythrocytes 2,620,000; white cells 13,200. Kahn three plus; Wassermann one plus. Landsteiner reaction positive. This was performed without the addition of guinea pig serum.

Progress Notes. On December 8, 1936, the patient appeared well. The urine was dark yellow in color. Albumen was one plus. Test for bile was negative. Benzidin test negative. On December 15, 1936, urine was negative for bile and benzidin test was negative. The Kahn test was repeated several times, and reported two plus on January 18, 1937, and again on January 25, 1937.

In view of the history, urinary findings, Landsteiner reaction, and Kahn and Wassermann tests, it was felt that a diagnosis of syphilis, congenital or acquired, and paroxysmal hemoglobinuria was justified, and that antiluetic therapy was indicated. He was then started on intramuscular bismuth, receiving seven weekly injections, beginning on February 1, 1937. Following this he was switched to mapharsen, which he is now receiving.

When he was seen on April 12, 1937, he had had no further paroxysms of hemoglobinuria. The spleen was still palpable. The urine was pale yellow, and tests for albumen and sugar were negative. The microscopic examination showed only an occasional pus cell. The hemoglobin was 56 per cent (Sahli). The Kahn test three plus; the Landsteiner reaction negative.

On April 19, 1937, his condition was the same. An incubated blood preparation showed no sickle cells. Reticulocytes were estimated at not over 0.5 per cent. No malarial parasites were seen. The erythrocyte count was 4,180,000, and differential showed 34 per cent polymorphonuclears; 60 per cent lymphocytes; 4 per cent eosinophils; and 2 per cent basophils.

DISCUSSION

One cannot say whether this patient has congenital or acquired syphilis, though the former would seem more likely. Paroxysmal hemoglobinuria usually occurs in relatively late syphilis, although one of the cases reported by McCarthy and Wilson de-

veloped the syndrome only four years after the initial syphilitic lesion.

The prognosis is good, provided the treatment is adequate. In the present instance it is too early to draw any conclusions. McKenzie found in his three cases that with antisyphilitic therapy the clinical manifestations ceased first; then the Wassermann test became negative; and, finally, the autohemolysin disappeared from the serum.

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We wish to express our appreciation to Dr. R. W. Garnett, Health Officer and Director of Public Welfare for the city of Danville, for permission to publish this case; and to Miss Margaret Tatum for assistance with the technical work.

Masonic Temple.

THE EMOTION-REASON BALANCE.*

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Our emotions are millions of years of age and hark back to our remotest animalistic ancestors, while our power to reason began to increase in development with the dawn of civilization, possibly some eight or ten thousand years ago. Indeed, what advance we may have made in civilization is chiefly due to our gradually expanding power to reason.

The expression of emotion frequently appears to be a by-product of an instinctual urge. Anger may be primarily the offshoot of the instinct of self-perpetuation, and grief at the death of a loved one may be unconsciously a part of the instinctual urge for the preservation of the species. The more expulsively the emotion is expressed, the less intelligence the person is apt to show. The mode in which an emotion is expressed is largely dependent upon two things, the sensitivity of one's feeling-tones and the inhibitive influence of one's reasoning power. Thus one individual may be, almost unhamperedly, of the emotional type, and his feeling-tone sensitivity may lead him to showers of tears, explosions of anger, quakes of fear, or unwarranted demonstrations of affection; while another individual may be dominantly of the reasoning type and show no emotional manifestations, even when some of them would be natural and desirable. Undoubtedly the most effective individual is the one who, when some stressful situation

arises and the emotions begin to surge up, immediately envelops them with his reasoning faculties and holds them in abeyance in order to direct them with that rational purpose and good judgment which leads to sensible accomplishment. This may be voluntary or involuntary, and we may, if we like, borrow Pavlov's term as applied to reflexes and speak of conditioned emotions.

Mr. David Lloyd George, quite an emotional type of man, exhibited many times during the World War this ability to handle his emotions with his reason. His emotions would have put the labor party in power but his reason controlled his emotions and he formed a coalition of all parties which was thought to be impossible. Again, his emotions told him to kill the abdicated Kaiser but his reason argued that it was better to keep the Kaiser in innocuous disquietude in Doorn. When Lloyd George worked with his emotions alone he usually failed. If he had been able to use pure reason alone he would also have failed. What counts is the ability to back one's reasoning power with one's emotional force—to shoot one's charge through a well-constructed and accurately-aimed gun.

A few domestic animals, like the horse and dog, have developed a glimmering of reasoning power. Experiments with orang-outangs seem to show that these higher animals not only have a certain amount of reasoning faculties but show emotions that resemble those of the human being. I quote from

*Read at the meeting of the Association of Seaboard Air Line Railway Surgeons, November 16, 1937, in Miami, Fla.

memory the story Dr. Charles W. Burr told me of these experiments. A steel cage was so constructed that a banana could be suspended from the ceiling of the cage and be out of reach of an orang-outang when he jumped for it from any part of the cage and a three-piece fishing rod was taken apart and put in the cage. Three oranges were denied food until they were hungry and then one was put in the cage and his actions observed. He looked around and spied the suspended banana for which he jumped and he also climbed upon the bars and tried to reach it. After many attempts without avail he went over in a corner of the cage, bowed his head and assumed the attitude and expression of an acute melancholic depression. This animal was removed and another orang was put in the cage. He went through the same attempts to get the banana, by jumping and reaching, without success. Finally he became frantic, screaming and beating himself against the sides of the cage and bars until he had to be removed. A third orang-outang was then put in who tried the same jumping and reaching without being able to get the banana, but then this one looked around and observed the three pieces of the fishing rod. He endeavored to reach the fruit with the first piece but it was too short. He then tried to fit in the second piece, at first using the wrong end to fit into the ferule but he turned the other end to fit. This would not quite reach so he fitted the third piece and knocked down the banana and ate it. The moral of the story is, I hope, evident.

Emotions are as contagious as measles but to spread reason one must inoculate the other individual and await a period of incubation. Many illustrations might be given of a mob swept by the emotions of menacing hate and fury being quelled by the speech and actions of some one man who manifested cool reasoning power backed by controlled emotional indignation. Uncontrolled this mass emotion has, all too frequently, led to strikes, lynchings, revolts and wars. Even more or less supposedly benign emotions, unleashed, may produce ludicrous or dangerous results. Thus religious emotions may become ridiculous or fanatical; patriotism, whipped up by propaganda, may become detrimental to one's own native land as well as to the enemy; and such things as reformation, prosperity, or happiness may end in orgies of shouting and sin, gambling and squandering, violence and drunkenness. Undesirable emotional expression does something harmful to the in-

dividual and to society, and uncontrolled mass emotionality is baneful not only to society at large but also to each of its component members. Modernly, emotions of the individual or of the mass may be affected from a great distance through the daily paper, the telegram, or the radio, which mediums, with rapid transit, have indeed made "all the world akin".

It is difficult to handle the mass with reason because one has to make an intellectual appeal to so many different grades of intellect, but it is easy to handle the mass with emotion, for emotions are more quickly responsive and do not require thought. Propagandists, politicians and evangelists know this only too well. It is doubtful that the group or mass has much power to think, much conscience, or much judgment. It can work only as a mass, and it is for this reason that the mass must always look to and for a leader and the most satisfying leader it can find is, of course, of the emotional type.

The emotional centers have recently been said to be located in the basal ganglia of the brain and some think that the thalamus is chiefly concerned. The ancients thought the emotions were located in certain viscera—the heart, as in sweetheart; the gall bladder, hence choleric anger; the bowels of mercy or of compassion; the spleen, from which comes splenic meanness. Galen divided temperaments into four classes—sanguine, choleric, phlegmatic and melancholic. Later, a French school separated them into respiratory, digestive, muscular and cerebral. However, it is possible that emotional expression, the origin of which may be either autogenic or initiated by an external stimulus, involves the whole personality—biologic, physiologic and psychologic. The vegetative nervous system and the hormones in the blood of the endocrine glands carry emotional influence to the brain, the cord, the peripheral nerves, the viscera, the blood vessels, the muscles, the mucous membranes, and the skin, in order that each of these may give vent to its own peculiar reaction. If these things are true, there is little wonder that various antagonisms arise when the emotions are perturbed.

Sadler feels that emotional conflicts eventuate into thwartings, repressions, anxieties, hysterias and dissociations. But what starts them? Freud thinks that practically all of these conflicts originate from the sexual trauma of infancy or childhood—that is the libido; Jung believes they more often occur from present struggles and difficulties than with the re-

pressions of past experiences; and Adler has said that much of the conflict is with the ego and the self-preservative instinct. Truth lurks, I feel assured, in each of these ideas, but the whole truth is not embodied in any one of them.

It is interesting to note what reactions may occur when emotion surges up. Watch the dog, the cat, the lion, when in the throes of emotion and see the animal change in its posture, its movement, and its expression from its previous state of composure; see its hair stand on end and listen to the noise it makes. The more highly organized animal, man, manifests more complex changes. He may pale or flush; he may have tachycardia or bradycardia; he may be insensitive to pain or suffer intense anguish; he may vomit, or defecate or urinate; he may become drenched with perspiration or his body surface may become dry. More complexly still, he may sacrifice his life for others or he may commit suicide or do murder; he may turn dare-devil or coward; his body metabolism may change; he may become physically, or nervously, or mentally ill. He may even die from uncontrolled emotionality.

It is a lamentable and terrible fact that human beings have not yet learned that their emotions should be conditioned by their reason, and that they have not realized that here lies the cause of much difficulty with education, religion, politics, matrimony, and industry. Medicine takes but too little cognizance of the emotional factor in physical as well as in mental disorder and disease. Society fails to see that most conduct disturbance is due to the individual's pathologically disturbed emotions, and still proceeds to correct its errant members by emotional punitive measures, even to the putting of these, its sick members, to death!

Civilization has always been interested in repression, hence laws, punishment, organization and government, while emotion has always had an urge toward expression, therefore the many conflicts. Happily, the control of the expression of emotion by the reason, an intellectual process, may be accomplished because reason is analytical and selective and has the ability to weigh consequences and to decide which and how emotions should be expressed. I once did some dangerous driving down and up an eight-mile mountain road with a teamster who had two horses to his wagon. One horse was more experienced, steadier and more reliable than the other, which was skittish and difficult to manage, but powerful. In

going down the mountain the driver hitched the steady horse to the outside and thus probably prevented our going over a precipice, but in going up the mountain where the danger was not so great he would see that the steady horse was on the near side. I asked him why he did this and he replied, "That steady horse is smart; in coming down he picks his way and doesn't let the other horse see too far, and in going up he hugs the mountain and lets that other horse do most of the pulling". These horses might well have been named Reason and Emotion.

When man has learned to strike the proper balance between his emotions and his reasoning power wars and strikes shall cease, there will be no inquisitions, education will be liberal enough to teach the student how to live life, denominational religion will disappear or exist in peace, politicians will turn into statesmen, and people will be able to develop without Communism, Nazism, Fascism, or New-dealia. Monuments to slayers, propagandists and prostitutes will be replaced by those to the world's real benefactors like Socrates, Leonardo da Vinci, Harvey, Bacon, Pasteur, Marconi, and in this country John Marshall and Grover Cleveland.

We must realize that the process of reason of which we speak is logical reason. False reason is the product of a warped or inadequate or misinformed mind and should be recognized as abnormal. Modern psychology, while in some respects has led to considerable advancement, in other respects has not always been logically based. The ultimate aim of the emotion-reason balance is not psychology but philosophy. Psychology may teach us how to pick life to pieces and analyze and attempt to understand it, but it is through philosophy that one learns to live life. Clear conception and logical reason leading to the exhibition of good judgment are the stepping stones by which is reached philosophy—man's highest attainment.

We have a highly exaggerated idea that we are a practical people. What, then, are a few of the practical applications of the control of the emotions by the development of the endowment of reason? First, we should adopt the railroad caution—Stop! Look! Listen! Then we might carry throughout childhood didactic and demonstrative instruction in emotion-reason conditioning; we might issue, after investigation, certification for propagation instead of whooping up heterogeneous birth control propaganda; we might adopt a satisfactory code to guide industry

and labor; we might require a psychiatric examination before trial of all criminal cases; we might take the license away temporarily or permanently instead of administering fine and jail punishment to reckless drivers; we might offer the opposing forces in Spain sensible arbitration; we might aid in selling Japan an outlet area for her population which would be less expensive to her and to all concerned than war; but, most of all, we might have a quiet conversation with our individual selves and see if we would not gain in all of our relationships if we poured upon our surging emotions the oil of our reason.

Many neurotic, psychoneurotic and psychotic states and bizarre personality disturbances could be corrected by the institution of a satisfactory emotion-reason balance, and, too, we should remember that continued strong emotional impingements may injure organically one or many of our organs or, indeed, our organism as a whole.

But this paper is meant to be provocative rather than conclusive, and the subject deserves much more consideration than may be herein given.

Such sayings as "let the individual express his emotions", "lift the lid and release repressions", "let me lead my own life", "do what you wish to do", "man is a free agent", and other modern statements are fast becoming adages which, if literally followed, can but lead to distress, disaster, or destruction.

The lower animal still dominates man's actions and reactions, and his intellectual and reasoning faculties are yet in a retarded and primitive state. By the recollection and contemplation of this statement means may be tried to reverse the formula, and let reason be the dominant factor, the accomplishment of which will give prospect of more advancement and satisfaction to the human race, I believe, than any other line of endeavor.

With the attempt to attain the emotion-reason balance we may not only live in some degree of comfort with ourselves, but also at peace with our fellows.

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GENERAL CONSIDERATIONS IN THE DIAGNOSIS OF HEART DISEASE.*

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To attempt to deal fully with the numerous diagnostic problems, both specific and differential, in relation to all forms of heart disease would necessarily require a voluminous piece of writing and dissertation, and it is not the purpose of this paper to attempt any such comprehensive discussion. There are, however, certain features in connection with the detection of heart disease, generally, which are of paramount interest both to doctor and patient when this question is undertaken. It is my purpose here to discuss a few of the more commonly misinterpreted, as well as puzzling, symptoms in this field—not from the aspect of any one specialty, but from the viewpoint of the general practitioner who is more often called upon to make the initial decision on his findings than the physician of any other group.

At the outset, any one of these as an isolated symptom is often the only sign post guiding the phy-

sician's approach to the problem, and to the patient such a sign or symptom is usually the source of some misgiving and apprehension. To tell a patient that he has or has not heart disease places a direct responsibility upon the examining physician, because to so label a normal, healthy person often makes of him a chronic heart-conscious individual who lives under a varying degree of restrictions and fear. Too often, children from the very young to the adolescent are brought in for advice and a check-up and on the first visit the parent or guardian gravely informs one that the child is said to have heart disease; whereas, on cardiac examination in many of these cases the findings consist solely of a soft, blowing systolic murmur over the precordium. The child is not allowed to play or exercise to full extent with his companions. He sits by on the side to watch their games and enjoyment pass by him. At home he is the subject of special attention and often poorly concealed parental concern. I need go no further into the effect emotional-

*Read before the Seaboard Medical Association of Virginia and North Carolina, at Virginia Beach, Va., December 9, 1937.

ly and constitutionally of such a régime on the average, growing child and the ultimate undesirable result.

Another common story is that following frequent attacks of irregular pain in the side or subcostally, the doctor decides that Johnny, aged ten or eleven years, is suffering from a somewhat vague illness known as "adhesions around the heart" and that hereafter his activity must be greatly restricted in order to relieve the pain. Naturally, these questions bring up the point as to just what their relation to cardiac function is, what is their relative importance, and how they may best be interpreted in regard to the future outlook of the individual.

The significance of an apical or precordial systolic murmur has been discussed in many textbooks and treatises by a host of competent authorities as a finding on both children and adults. Such a murmur is heard commonly in many febrile states, in acute infections, in many anemias, in cachectic states and in many growing children. In the majority of cases it is temporary and transient in character and disappears when the particular state to which it is an accompaniment is relieved. In children, it most often disappears entirely following puberty or adolescence. As is well known, such murmurs are functional in type and do not represent permanent, chronic heart damage. These factors are common knowledge, yet the interpretation remains at times a troublesome clinical finding.

Let us investigate the factors concerning these murmurs further. Murmurs are first divided into two main, primary groups—the functional and the organic—the latter being those which are due to actual disease of the endocardium, myocardium and valve leaflets or great vessels, while the functional group is comprised usually of those murmurs heard as a result of some altered structural relationship of the surrounding parts. Ninety to 95 per cent of all functional murmurs are systolic in time, and Cabot¹ believes they are due either to a permanent or temporary dilatation of the conus arteriosus or to pressure—suction upon the overlapping lung fields. Diastolic functional murmurs do occur according to this author, but they are exceedingly rare, being due most probably to a stretching of the aortic ring or to transmission from veins in the neck. Others have ascribed the origin of this type of murmur to several other sources as well.

There are certain criteria which are of definite

importance in differentiating these murmurs from the organic type, and this author has an excellent resumé in outline form of the characteristics of functional murmurs which I believe worthwhile to include here in detail:

1. Almost all functional murmurs are systolic in time.
2. The majority of them are best heard in the pulmonic valve area in the second, left intercostal space. From this point they are transmitted in all directions; not infrequently they are heard with greatest intensity over the aortic or mitral area.
3. As a rule, they are short, soft and blowing in quality, and they accompany the first sound. They almost never extend totally through systole.
4. They are usually not associated with evidence of cardiac enlargement, nor with accentuation of the pulmonic second sound.
5. They are usually louder at the end of inspiration.
6. They are usually heard over a limited area only, but there may be exceptions to this.
7. They are not of constant character usually, their presence varying with exercise, with a change of position, and they may cease altogether when the breath is held.

If the above characteristics are determined carefully, the majority of cases will present no great difficulty of classification. The presence of a functional murmur does not by itself represent a serious cardiac outlook. They do not, *per se*, produce cardiac failure nor cause circulatory embarrassment, certainly before middle age. The younger the individual, broadly speaking, the more hopeful the prognosis in the presence of such a murmur. Certainly, it is no justification for making a partial invalid of an otherwise young and healthy individual because a functional murmur has made its appearance. Moderate restriction of strenuous exercise and athletics until the murmur disappears seems all that is necessary. The term "functional" should be carefully explained to the parents and the title of "permanent heart damage" had best be avoided altogether in this situation. In children as they are followed through childhood into adolescence and then into young adults, it is surprising what loud, harsh and persistent murmurs, often accompanied by an over-active and tumultuous heart, will eventually disappear entirely. A history, however, of rheumatic fever in connection with the presence of a

murmur should throw more than an ordinary suspicion and observation on the patient, and alters the prognosis somewhat as well.

It is interesting to note in insurance studies and actuarial studies the mortality figures in relation to the various types of murmurs. These statistics are not offered as totally accurate due to the fact that there is a great variation in the numerous observers and their qualifications. The consequent figures should be inspected with this in mind.

In these statistics² the mortality of all cases with cardiac functional murmurs without hypertrophy was 21 per cent in excess of the normal expected death rate. The organic murmurs, listed as a constant systolic murmur at the apex transmitted to the left, show the following figures; without evidence of hypertrophy, 11 per cent in excess of the normal; with slight hypertrophy, 59 per cent in excess; and with moderate hypertrophy, 156 per cent in excess of the normal expected death rate. This article makes note that after middle age it appears that the presence of a functional murmur should not be entirely disregarded. To quote—"the published experiences of life insurance companies have shown an increasing relative mortality with advancing age under those classified as functional murmurs, whereas in the case of organic murmurs generally the reverse has been noted." After middle age it is important to carefully take into consideration all other concomitant factors, such as habits of the individual, occupation, height-weight ratio, blood pressure and intercurrent infections.

A very highly prevalent complaint amongst young children, especially from the ages of seven to twelve years, and not rarely in those slightly older, is the complaint of pain in the subcostal region or lower axillary region on either side following exercise, exertion, or a sudden change in position, even occurring occasionally while at rest. This complication from its very location, especially when it is in the lower left chest, is very frequently established in the minds of the parents, sometimes by the patient himself and not infrequently by the examining physician, as due to some obscure type of heart trouble. Yet, on examination no sign of abnormality of the heart can be elicited by the most painstaking examination. A child may suddenly complain of it on even moderate exercise and be forced to remain at rest until there is improvement of the pain. Location of the pain is usually subcostal, but may be localized higher up.

It may be bilateral and is frequently accompanied by so-called dyspnoea; this is, however, really a functional dyspnoea—that is, the child creates his own dyspnoea by refusal to breathe deeply for fear of inducing additional pain. After all other apparent causes have been exhausted by ruling out such things as spinal arthritis, pleurisy, chronic constipation and neuritis, this syndrome is commonly given the vague name of "adhesions around the heart".

Kugelmass,⁴ in writing on this subject of subcostal pain in childhood, points out the very frequent respiratory origin of such pain in these cases, remarking that occasionally the pains increase in frequency at puberty. The pain is relieved by forceful respiration, especially forced exhalation. Careful inspection of the respiratory movements reveals that a crossed abdominal-thoracic type of breathing is present. This has been described by Czerny in which the upward, expansile movement of the chest is so extensive that too great a cavity is created for the lungs to fill, with consequent drawing up of the abdominal viscera into the thoracic cage against the diaphragm. Observation of the respiratory movements shows a depression at the pit of the stomach instead of a protrusion on inspiration, and exhalation with sinking of the thorax is followed by the protrusion of the abdomen. Of further interest is the posture of these individuals, the majority of whom show a postural defect commonly consisting of a lordosis in the dorso-lumbar spine with a kyphosis above this in the lower cervical and upper thoracic spine. In most instances correction of the postural defect with respiratory exercises and deep breathing has greatly relieved or caused the entire disappearance of the pain.

In noting the physiological effects of correction from a kypho-lordotic posture to one regarded as optimum by the orthopedic standards, LaPlace⁶ and Nicholson found that on respiration the corrected as compared with the slumped posture induced (1) a slower rate, (2) increased depth of respiration (tidal air), and (3) increased pulmonary ventilation (respiratory minute volume). In rating the cardiovascular efficiency of eighteen healthy adults of both sexes of the B, C and D postures, according to the Harvard standards, there appears to be a tendency in the slumped postures of these eighteen healthy individuals for the pulse rate to increase and the blood pressure to fall, with less stability for both of these values than in the corrected postures.

In the majority of subjects, however, these differences were not significant except in two instances where it was felt the corrected posture was able to prevent a postural hypostatic congestion.

According to Gunther,⁷ heart pain rarely begins in the chest wall lateral to or outside the nipple line, and rarely radiates forward or backward from such a laterally located region. Cardiac pain in his opinion at its onset is usually substernal in its location or very close to this point, which lies within the distribution of the second to seventh spinal skin segments.

In regard to the actual production of pain and cardiac disturbances produced by adhesions, ordinarily the presence of one or two or several adhesions in the form of fibrinous bands between the diaphragm and pericardium, or between the epicardial and pericardial surfaces, is probably an extremely rare source of precordial or cardiac pain, unless there is torsion of the heart from its normal vertical axis. C. M. Beck⁵ states that in a large and continuous experimental series of his own, intra- and extra-pericardial adhesions did not produce circulatory embarrassment nor did they produce hypertrophy, dilatation or failure. On the basis of over 1,000 experiments in which various tissues were grafted upon the heart in attempting to establish a collateral circulation to the myocardium, it was his impression that adhesions produce little or no disturbances to the heart. Beck feels that, when present, adhesions are silent and incidental findings and that they produce no circulatory trouble whatsoever unless the heart is acutely angulated or twisted. He points out that in actual compression of the heart, acute or chronic, the etiologic agent responsible is fluid, scar tissue formation such as is seen in constrictive pericarditis, or neoplasm. In his findings fluid was the major cause of acute compression of the heart.

In discussing these various phenomena commonly observed in children and adolescents and their possible relation to cardiac function, some question will naturally arise concerning rheumatic fever.⁸ Without going too deeply into this subject, it is well to remember that this is admittedly the most common etiologic agent of heart disease in childhood and young adults. By far the greater amount of rheumatic fever occurs between the ages of five and fifteen years. In children carditis is usually found at an early stage. The joint symptoms here are often ab-

sent or mild and the process tends to last for a longer period of time, where as in adults the joint symptoms in the form of a polyarthritis are more commonly seen, and the disease is less likely to be of long duration.

The arthritic form of the disease is the most familiar and commonly recognized stage to many, but it must not be over-looked that rheumatic fever may manifest itself in numerous other ways, especially as a low-grade chronic infection. We must not fail to recognize its presence in the form of recurrent acute tonsillitis, growing pains, erythema multiforme, chorea and abdominal pains with low-grade fever, nausea and vomiting. These signs of rheumatic fever frequently often go entirely unrecognized, and it is not until later when cardiac damage becomes apparent that the nature of the previous illness is clearly interpreted. Rheumatic fever is now thought by some to be the sole causative agent of mitral valve disease with a few exceptions, such as subacute bacterial endocarditis.

It is not too dogmatic to say that a cardiac diagnosis based on the presence or absence of a murmur alone is incomplete. Organic disease of the heart will reveal, in most cases, other accompanying evidence of its presence such as tachycardia, some degree of cardiac enlargement, palpitation and dyspnoea. Without these signs, especially the first two, a diagnosis of organic heart disease should be made with some caution. Cyanosis, peripheral edema, elevated venous pressure and congestive phenomena are all late signs of heart involvement, and they denote a failing myocardium. These signs do not leave the examiner in doubt as to their source, and at this point the determination of the etiology is in most cases the primary point to be decided.

In regard to the actual mechanics and dynamics of myocardial failure, the concept of many observers is now swinging back to the theory of back pressure instead of that of forward failure with diminished cardiac output. On the basis of the latter, right and left-sided failure are not completely explained nor fully differentiated. Clinical signs fit into this picture with some difficulty on several points. In 1936, Harrison⁹ and his co-workers, in a series of animal experiments, showed congestive failure revealed a diminished cardiac output per minute, but that no correlation existed between the amount of blood pumped out by the heart and the clinical state of the patient; and, again, that diminution in the output

of the heart does not regularly occur during the early stages of failure. Such a diminution may even be preceded by the appearance of congestive phenomena both in the systemic and pulmonary vascular beds. Improvement with disappearance of congestive phenomena may be associated with no change in the cardiac output, or with a change in either direction. By injecting measured amounts of chloroform intravenously into animals they were able to produce myocardial failure with lowered arterial blood pressure, accompanied by gradually increasing edema of the lungs, but no rise in systemic venous pressure except as a terminal event. Autopsy showed dilatation of the heart with pulmonary edema. In a second group, using potassium chloride, they demonstrated a slow rise in systemic venous pressure with the arterial pressure remaining at normal level until just before death when it suddenly declined. Autopsy revealed a dilated heart but grossly no edema of the lungs.

This work seemed to demonstrate that unilateral failure could occur alone. The work of J. A. Eyster on venous pressure corroborated their experimental results. The conclusion of this group was that James Hope's original hypothesis on the back pressure theory, introduced by him nearly 100 years ago and taught as the accepted theory until the present century, was more closely allied to the observed physiological phenomena and autopsy findings in both experimental animals and humans than the therapy of forward failure, for the following reasons:

1. The theory of forward failure with diminished cardiac output fails to account for the presence of edema.

2. This hypothesis also fails to account for dyspnea, for this symptom has been shown to be unrelated to gases in the blood.

3. It also fails to account for the presence of congestive phenomena in the lungs with no elevation in the venous pressure or peripheral edema.

These findings are now being corroborated by other observers^{10, 11} and it might be re-emphasized that clinical and physiological data both more closely agree on this concept than that of forward failure.

One of the chief points of the back pressure theory was that either side of the heart may fail alone, or both sides may fail together. Congestive phenomena in the pulmonary bed, as evidenced by pulmonary congestion accompanied by hypertrophy and dilatation, indicates failure of the left ventricle of left side

of the heart, whereas elevated venous pressure, peripheral edema, cyanosis and enlargement of the liver denote right heart failure. In those instances where the failure is diffuse with both sides of the heart failing together, the picture will include all of the above signs present in some degree.

SUMMARY

1. The presence and determination of functional murmurs, especially in children, has been discussed. It is felt that the great majority of these tend to disappear relatively soon after adolescence and that in most cases they represent no permanent cardiac damage nor a serious prognosis.

2. The origin and significance of subcostal and lower chest pain in children and young adults has been considered in relation to postural defects. Attention has been called to the frequent respiratory origin of such pain.

3. The importance of additional diligence is urged in detecting other forms of rheumatic fever than the well-known polyarthritis.

4. The back pressure concept of heart failure has been reviewed and stress has been laid upon the increasing knowledge of this.

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THE TREATMENT OF CARCINOMA OF THE CERVIX.*

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In the preparation of this paper the literature of the last five years on the treatment of carcinoma of the cervix was reviewed. This review showed that the choice between surgery and irradiation in this condition is not an entirely settled problem. There is still a minority which does not subscribe to the majority's opinion that irradiation is the method of choice. This is discussed. In addition, the paper states briefly some of the problems of irradiation therapy, and concludes by presenting the treatment of cancer of the cervix now used at the Medical College of Virginia.

The first vaginal hysterectomy for carcinoma of the cervix was performed in 1822, and the first abdominal hysterectomy for this condition was done in 1878. In the operations which followed the primary mortality rate was high and the cure rate low. Accordingly, the operation was not popular. The surgical technique subsequently underwent a period of development which culminated in the radical abdominal panhysterectomy of Wertheim and the radical vaginal hysterectomy originated by Schauta. In these the uterus, adnexa, parametria, and at least a large portion of the vagina were removed with or without an extensive dissection of the lymph glands. It was then that the operative technique reached its highest development, and at that time practically all operable cases of carcinoma of the cervix were treated by surgical means. These highly developed operations resulted in a considerable percentage of cures in the operable cases, but even in expert hands the mortality was high. The radical operation was unsuited to the average surgeon, and the simple panhysterectomy, more suitable to him, had little or no justifiable place in the treatment of this condition, because its performance, except in rare cases, resulted in recurrence. The radical operation, however, offered hope to the patient previously without such, and it richly deserved the important place it came to occupy.

At that time the surgical treatment of this condition was in its heyday. Irradiation therapy, introduced in the beginning of the twentieth century, was reserved for the treatment of the hopeless inoperable case as a palliative measure only. During this period, however, unexpected cures were sometimes obtained among those patients who had received irradiation for palliation alone; and the results in cases not cured were often strikingly good in that the bleeding and discharge ceased, pain ended, the patient gained weight, felt an increased sense of well-being, and sometimes carried on in relative happiness and comfort for a number of years. Encouraged by such results in the inoperable cases, the field of application of irradiation therapy was widened, and more and more cases in the operable group were treated by irradiation. It soon became apparent to many workers that as good results could be obtained by irradiation as by operation, that a wider range of cases could be treated by the irradiative method, and that the primary mortality was considerably less.

Then the trend from surgery to irradiation was on. This change is reflected in the following paragraphs in information gained from the literature of the last five years.

Crossen, when invited in 1934 by Dr. Livingston, the editor of the *American Journal of Surgery*, to present in a symposium on carcinoma of the uterus the technical features of the radical operation, declined to do so on the ground that this operation was obsolete. He stated that he would keep a description of the operation in his *Operative Gynecology* because of its historical importance. Dr. Livingston reviewed the literature and decided to omit the operation.

Shaw, one of England's most distinguished gynecologists, formerly a strong advocate of surgery, later having equal experience with operation and irradiation, has this year (1937) published his advocacy of radium. In the discussion of Shaw's paper, two distinguished American gynecologists, Keene and Anspach, concurred with Shaw in the opinion of the superiority of irradiation. Keene,

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Read before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, Va., October 12-14, 1937.

in 1932, reported that on the gynecological service of the University of Pennsylvania Hospital only one case had been operated upon during the previous eleven years; at first all operable cases there were treated by panhysterectomy. In 1933 the Massachusetts General Hospital reported that only two Wertheim operations had been performed since 1925, one year after the use of radium was begun there.

Among those in the recent literature who express or imply that they favor irradiation are Eymer, Laborde and Wickham, Dietel, Regaud, Jansen, Schinz, Cutler, Findley, Pfahler, Doderlein and Voltz, Keene and Kimbrough, Burnam, Simpson, Seitz and Wintz, Pankow, Forsell and Heyman, Lacassagne, Coutard, Kelly, Healy, Schmitz, and Ward.

Much in minority are those such as Bonney, and Faure who prefer surgery alone in operable cases. Also among the minority are those as Reiprich, Duncan, Schlink and Chapman, Blaikley, Gellhorn, and others who favor combined surgery and irradiation.

The chief points of comparison of one method with the other are the cure rate and the primary mortality. As pointed out by Morton and others, evaluation of the reported results is very difficult because so many variable factors enter into the make-up of the figures. Among these factors is the relative proportion of cases in the several stages of the disease. Some material has a high percentage of advanced cases with a resulting low salvage rate, and other material contains a disproportionately high percentage of early cases with a corresponding high salvage rate. In many instances the stage distribution of cases is not shown. Furthermore, some reported figures of cures are absolute, being based on the number of cases seen, while others are relative, being based on the number treated. Taking the figures from the world at large it seems that between twenty and twenty-five per cent of women suffering from carcinoma of the cervix are cured by adequate treatment whether that be irradiation, radical surgery, or a combination of the two. Kinney and others give statistical tables and individual reports supporting this statement.

Cutler believes it is desirable to compare the results obtained by the two methods when used by men of equal ability in the respective fields. Accordingly, he compares the results obtained by Regaud and by Faure, acknowledged leaders in

France. He finds that in operable (Stage I) cases Faure obtained a five-year cure rate of 40 per cent and Regaud 79 per cent. Further, he points out that if Faure's twenty cases which were lost track of and his three cases dead of intercurrent disease be assumed to have been cured, Faure's cure rate would be increased to 70 per cent, or less than that of Regaud. Naturally, the assumption that the lost cases were all cured is unjustifiable. In cases of borderline operability (Stage II) Cutler finds Faure's five-year cures 22 per cent, and Regaud's 41 per cent.

A similar comparison shows that Bonney, a master of the operative technique, reports an absolute five-year cure rate of 25 per cent after operation, but that this, while comparing favorably with irradiative cures at large, falls below those of Regaud, a worker of comparable skill. In a probably similar group (Stages I and II) of cases Regaud's rate was 45 per cent.

In further support of the irradiative method, and in explanation of the general slight differences in the percentage of cures by the two methods, is the recognition of the fact that most of the published statistics contain cases which were treated while irradiation was in its earlier development, and therefore less effective than it became later. Because of the five- and ten-year cure standards most of the reported cases were treated prior to the last five or ten years, and during this period considerable advances in irradiative methods were made. On the other hand, the statistics on operative results are those of a method that had reached its maximum improvement when the cases were treated.

The progressive improvement in irradiative results is shown by those statistics which give periodical results. Figures from the Curie Institute show this. These begin with a 10 per cent five-year cure rate for all cases seen in 1919, and show progressive improvement to 36 per cent for all cases seen in 1926. For the period 1919 to 1922 the rate was 26 per cent; for the period 1923 to 1926 the rate jumped to 33 per cent. Furthermore, there is some reason to believe that irradiative technique will continue to develop, whereas the technique of operation and results thereof appear to remain static.

There is the other point, the mortality rate. Even if it is conceded that the literature shows only moderate, if any, statistical superiority of irradiation

over surgery as far as five-year results are concerned, it must be admitted that there is a greater difference in the primary mortality rates of the two methods.

Bonney's operative mortality has dropped from 20 per cent for the first 100 cases to 9.5 per cent for the last 128 cases. The average mortality for his series is 14 per cent. Wertheim's operative mortality (quoted by Simpson and others) is 11 per cent. Heyman (quoted by Voltz and by Maguire) from a study of all available literature found an average primary mortality of 17.2 per cent following the radical operation. Pankow (quoted by Taylor) showed from collected statistics a primary mortality of 15 per cent following abdominal hysterectomy, of 8 per cent following vaginal hysterectomy, and of 2 per cent following radium therapy.

Doderlein's figures (quoted by Voltz and by Maguire) showed a 0.8 per cent primary mortality following radiotherapy. Fricke reports a primary mortality of 1.16 per cent following irradiation. Eymer, of the University of Heidelberg, reports a primary post-irradiative mortality of 3.3 per cent. Regaud reports a primary irradiative mortality of 1.4 per cent to 2 per cent. Jansen's irradiative mortality was 3.2 per cent.

That a larger number of cases can be treated by irradiation than by operation is generally agreed, but there is considerable variation in the estimate of the number suitable for operation. Healy states that only 10 or 15 per cent of cases are seen sufficiently early to permit of satisfactory and thorough surgical removal. Bonney gives his operability rate as 63 per cent. Voltz states that the percentage of cases which can be treated by irradiation is 96.7, whereas the average figure of operability compiled from all available literature is 64 per cent. This figure seems high considering the stage distribution of cases as reported.

The audience will draw from the foregoing figures whatever conclusion it thinks just as regards the relative merits of the two methods. That the question is not settled to the satisfaction of all seems apparent. More important, however, than the statistical study seems to be the fact that most of the great cancer centers have adopted irradiation, that in those places where adequate surgery and irradiation are equally available the latter is gener-

ally preferred, and that more and more gynecologists have abandoned surgery in favor of irradiation.

However, among the strongest exponents of the superiority of irradiation, there are those who state that in exceptional cases radical surgery is preferable to irradiation. Some of these cases are those of the radioresistant group, having carcinomata which do not respond to irradiation. It is claimed that radioresistance can be foretold from the histological picture, but there is evidence to the contrary as the histological type seems to have little influence on the end-results of treatment. It would seem that the best test for radiosensitivity is the therapeutic test. If, after complete irradiation, adequate response does not occur, the case, if early, should be operated upon. Another group of cases which are justifiably operated upon are some of those associated with adnexal infection or those having intractable pyometra. Irradiation in these cases sometimes leads to fatal sepsis, the major cause of radium mortality. A third group of cases in which operation might be preferable are those cases in which, because of anatomical peculiarities, adequate irradiation cannot be applied.

In the field of irradiation itself, there are many controversial problems. It must suffice in this particular paper to merely mention some of them by pointing out that the question of total dose, the length and intensity of treatment, the time intervals, if any, the degree of filtration, and the placement and form of applicators are subjects of debate. The recommended factors of treatment differ widely at different institutions. As to the general type of irradiation it is almost universally agreed that radium is superior to X-ray; but it is being recognized that intracavitary radium alone cannot deliver a lethal dose to tumor cells situated more than three or four centimeters distant from the source of the rays. Therefore, intracavitary radium is not adequate treatment when used alone in cases in which there are lymph gland metastases in the pelvis or extensions into the parametria for a distance greater than this. Accordingly, external irradiation in the form of X-ray or the radium pack, usually the former, is now added by most therapists to complement the internal therapy. The introduction of external irradiation has improved the cure-rate, and irradiation by this method should be regarded as a

necessary part of the treatment in all cases with the possible exception of those in the earliest stages.

Recently, there is fairly general concurrence of opinion that the external irradiation should be prolonged and should precede the intracavitary treatment. When thus used, external irradiation exerts a beneficial effect in cases of infection, reaches first the most active cells at the periphery of growth, devitalizes the malignant cells before they are subjected to trauma thus reducing the chance of metastases, and permits a period of general supportive treatment.

The method of treatment adopted at the Medical College of Virginia is essentially that of the Michael Reese Hospital, of Chicago, and the Radium Institute, of Paris, differing only in minor details from the technique at these institutions. It follows the principle of a small dose given continuously over a longer period of time. Its supposed superiority is based on the belief that all tumor cells will thereby be exposed during their most vulnerable state, mitosis, and that also a larger total dose can be given without endangering the normal tissues. The radium treatment extends over a period of approximately seven days. A total dose of 7,000 milligram hours is usually given, half in the uterine canal and half in the vagina about the cervix. The applicators are (1) the Curie Colpostat, which is composed of two corks mounted on a spring and a third loose cork. Each of the two mounted corks fits into a lateral fornix of the vagina and the third cork rests directly against the cervix at the external os. The filtration is approximate 1 mm. of platinum plus 1 cm. of cork. (2) The intrauterine applicator consists of two tubes, in tandem, each containing equal amounts of radium. The filtration is 1 mm. of platinum plus 0.5 mm. of rubber.

The applicators are rarely used simultaneously. The colpostat is applied first and its use continues for a period of approximately five days. Each or every other day it is removed, a douche and an enema are given, and the colpostat replaced. At the end of the treatment with the colpostat the intrauterine applicator is inserted. At this time the cervical canal has become more patent and the cancer cells more devitalized. The danger of trauma and infection is thus minimized. The treatment with the intrauterine applicator adds two more days to the period of radium therapy.

Radium therapy by the above method is always

combined with X-ray therapy, given over a period of three weeks. We believe that ideally external irradiation should precede the radium therapy in all cases except those in the earliest stage. Practically, we find reasons why this should not always be the sequence followed. We treat each case as an individual problem. In those cases in which we think there is a reasonable probability that, because of ignorance or of economic pressure, the patient will discontinue treatment, we give first that part of the treatment which we regard as the most important, that is the radium. In other cases we give the external irradiation first; and often we interrupt the external irradiation during the latter part of its course, to give the radium, and complete the external irradiation afterward. Many cases in stage IV of the disease, we treat by external irradiation only, believing that this method is most suitable for palliation alone.

The external irradiation is given by Dr. Frederick B. Mandeville and is as follows:

Six portals, each 10 x 15 cm., consisting of right anterior, left anterior, right lateral, left lateral, right posterior, left posterior, over the pelvis, extending from the iliac crest downward and including the pubis, are used. The beam is centered to the lateral side of the pelvis and not directly to the cervix. Two portals are treated daily and they are rotated so that each portal is treated every fourth day. The cycle extends over a twenty-one day period, which includes daily treatments, except Sundays. The factors used are 200 K.V., 70 cm. distance, 25 ma. current, 1/2 mm. cu. plus 1 mm. al. using 250 r as a single dose. This takes eight and one-third minutes as the output is 30 r per minute with these factors. The patient therefore receives 1,500 r to each of six portals, or a total of 9,000 r with effective wave-length (Daune) .16 Angstroms. The technique is that of Arneson and Quimby. Occasionally 2 mm. cu. and 1 mm. al. are used to obtain the 6 per cent greater depth dose. As this takes three times the time it is not used as a routine. This fractional method of therapy has proved extremely satisfactory with slight tanning and no severe skin reactions.

The immediate results following the plan of treatment described above have been good. The method has been in use too short a time to permit a report of the end-results.

EDITOR'S NOTE.—An extensive list of references was omitted upon request of the editor.

DISCUSSION

DR. R. DUVAL JONES, Norfolk: Unfortunately I have had very little personal experience in the treatment of carcinoma of the cervix, and therefore I do not feel that I am qualified to discuss Dr. Hoge's excellent paper.

When Dr. Trout called upon me, he must have had in mind the striking results obtained by my associate, Dr. R. L. Payne, who has had a wide experience in the field. In recent years he has handled these cases almost entirely by implantation of radium emanation seeds. From what I see of his work, I would say without question that radium therapy is the answer to the question of treatment of carcinoma of the cervix, for in most instances the results are striking, and in many cases almost unbelievable.

DR. WRIGHT CLARKSON, Petersburg: Dr. Hoge has given us an excellent paper and I wish to congratulate him.

External irradiation prior to intracavitary radium therapy is essential to the proper management of carcinoma of the cervix. In a few selected cases surgery can also be used to an advantage.

This subject should not be considered a radium problem, an X-ray problem, nor a surgical problem. It is a cancer problem. Every patient should be managed by a physician thoroughly trained in oncology, that is, one willing and capable of directing any one treatment or any combination of treatments that may be found indicated after a thorough study of each individual case.

It is encouraging to know that our two medical schools in Virginia are now gradually developing departments of oncology. For the work to be properly cared for in Virginia, there must eventually be a chair of oncology in each of them.

DR. CHARLES R. ROBINS, Richmond: I want to compliment Dr. Hoge on the work that he is doing in standardizing the treatment of cancer of the cervix in a way that I think makes his work valuable to the whole profession. When irradiation first came out I wondered for some time what should be done with the early cases of cancer which, however, are rarely seen. Most cases of cancer

are seen after they are already advanced and extended. I wrote a paper in those days on that subject. I made the contention, which has been borne out by experience, that, classifying cancer as hard and soft, I had found that the most spectacular results were found in the cases of soft cancer. In most of these cases you do see them melt away under irradiation.

I have in selected early cases done the Wertheim operation for cancer of the cervix, but they were comparatively few. However, I read in the paper a few years ago of the death of a woman on whom I had performed this operation for cancer of the cervix twenty-five years before. There are others on whom I have done that operation that are still living. In these early cases, are you going to operate or are you going to treat them with radium? Certain types of cancer are radio resistant and these are usually cases of low malignancy. If you are fortunate enough to see them in the early stage operation offers the most certain cure. The fact that radiation can be used in practically all stages of cancer of the cervix makes it the most dominant therapeutic measure for this disease. Even in apparently hopeless cases the results sometimes attained are extraordinary. My most striking case was in a woman who had a cancer fixed in the pelvis by extension and bleeding freely. Radium was used without any great expectation of good results. However, she lived for seven years in a condition of good health and able to do her work for which she received good remuneration. Radium was applied twice after on return of symptoms. She finally died of cancer but in the meantime had lived a normal life.

Successful treatment of cancer of the cervix consists in getting the cases early. For many years I have advocated the periodic examination of women of the cancer age. Early cancer often appears in the most healthy looking people. I have had people to come into my office who looked as though they never had a sick day in their lives, yet had cancer. If we can make periodic examinations of women of cancer age we will get somewhere because the cancer can be found in its early stage. When they go beyond that favorable point successful treatment is more difficult.

OBSERVATIONS OF ONE HUNDRED GONORRHEA INFECTIONS TREATED BY RECENT METHODS.*

W. W. S. BUTLER, M. D.,
Roanoke, Virginia.

It is not my plan to take up bladder tumors or kidney conditions which are treated with highly specialized equipment, but the most common disease in which the organism is definitely and easily recognized. The discussion will be limited to a

series of gonococcus infections or sequelae just as they came in and three times out of four are treated by men in general practice. While this condition rarely kills, it affects more people, and wrecks more homes and makes more invalids than any disease we meet.

It has been my pleasure recently to hear this

*Read before the Southwestern Virginia Medical Society.

subject discussed by three leaders in this field: Dr. Clyde Ross, of Richmond, who began by saying that in many years of teaching, as each student comes back, he has a different method. This means that there is no outstanding method to follow. He says the course is six weeks to six months and more likely the latter. Dr. Ballenger, of Atlanta, presented his experiences in a most entertaining manner by enumerating twenty-six groups of cases, each to be handled differently. The number twenty-six was selected because this happened to be the number of letters to give each a name.

Dr. Pelouze, of the University of Pennsylvania, calls attention to the cardinal principles underlying the treatment and course of this disease: (1) Good drainage means a good curative response; (2) Intermittent drainage means chronicity, and (3) No drainage means autolytic sterilization except with Bartholin's, Cowper's and the para-frenal glands.

The surface epithelium of the urethra, specially in the female, has a free drainage and heals promptly. The areas from which we get a poor drainage are the prostate (75 per cent), seminal vesicles (2 per cent), and para-urethral sinuses. These structures tend to chronicity; strictures prevent their drainage as well as the normal structure of the glands. Occasionally a para-urethral sinus is seen to open just outside the urethral meatus and affords an example of just what happens in the urethra. The slight secretion expressed from it by pressure is seen to be loaded with gonococci. This patient may be apparently entirely well for weeks and yet a little gentle pressure will show this infectious pus. Injections of strong or mild antiseptics directly into this duct do not cure it, even carbolic. Complete excision is difficult because it is not felt as a distinct mass as the Bartholin gland. Such a condition in the urethra may account for innumerable recurrences. Local treatment by injections or the endoscope is equally futile. The cervical glands present a similar problem.

Then, there are the third group of structures which have neither good nor intermittent drainage, but as long as any edema is present, are sealed off. This represents the pus tubes or the epididymis. Autolytic sterilization takes place unless an abscess or secondary infection supervenes.

The therapeutic answer to a focus for repeated reinfections from the gonococcus which has not been

eliminated by local measures is some blood born agent. Sulfanilamide partially meets this requirement.

In our group of one hundred and twenty-four patients treated by this drug and mild local treatment, one hundred and four showed the gonococcus on microscopic examination. Forty-seven were acute anterior infections showing pus and the gonococcus with varying amounts of inflammatory reaction. Almost without exception, in from one to three days the discharge was gone and both glasses were clear. Then began the lassitude and depression from the tablets, which were reduced from twelve to eight per day divided into four doses of two to each dose. In this forty-eight, fully a third, for several days, had a slight moist secretion in which gonococci were present. Persistence in use of the tablets for a period of two weeks caused an apparent cure in forty-three, but recurrences followed in eleven, to clear up within the week. In four the drug was apparently without effect. The local treatment, once every two days, was continued for two weeks and the interval was gradually increased until two months after infection. This local treatment produces some tissue response and may be of value in this way as well as providing some means to keep these people under observation, but its bactericidal effect may be discounted. Epididymitis occurred in one of this group, and was of three weeks' duration and quite severe.

In thirty-six, with infections of more than two weeks' duration or the second glass cloudy and frequency present, the results were slower. One instance of eight months' persistent discharge cleared in a few days and has remained so, including a clearing up of pus in the prostatic secretion. With these cases, instillations, when introduced without pain, have been used in preference to anterior injections. In four, coming in with epididymitis, improvement began in a few hours, and in two days a marked reduction in swelling was present. This is in marked contrast to the one occurring in our first series.

Two prostatic abscesses with retention were sent us and none occurred in those under treatment by us. These were incised per urethra, using the electro-tome. One acute prostatitis occurred in our series, but subsided in a few days and urine was clear,

though an occasional secretion showing gonococci persisted.

No alarming reactions followed the use of the drug. Bluening of the lips, nausea and general malaise were present in varying degrees, but stopped in forty-eight hours after discontinuing the drug. Skin eruptions over back of hands and fore-arms occurred in twelve instances. Three who showed no constitutional reaction to the drug failed to get a clinical response. One rather acute case had a marked depression from the drug with bluing of the lips. On the third day when the tablets were stopped, the discharge increased, but on the following day had disappeared entirely. My impression is that the clinical response is to some extent proportional to the constitutional reaction. Dr. F. A. Reuter, of Washington, calls attention to this. If it be true, the initial doses should be increased until cyanosis or depression occurs and should be under careful supervision. Several who tolerated only small doses of the drug have persisted in mild recurrences showing the organism. Without the sulfanilamide, these may have been of the severe type. Soda apparently did not affect this. Magnesium sulphate is contraindicated as it may increase the effect on the haemoglobin.

The peculiarity of the gonococcus that intermittent discharge produces chronicity while obstruction tends to autolytic sterilization or abscess formation has a bearing on when to use massage in the prostate. If gonococci are present, I believe it is contraindicated. Later, when secondary infection only is present, massage is of value, but the pus tends to recur. With the addition of sulfanilamide to the usual local treatment, the results have been much improved. During our study of this drug, we have treated nineteen prostatitis cases and, with the microscopic appearance of the prostatic secretion as guide, improvement has occurred in every one.

One arthritic patient was brought to us with severe posterior urethral involvement of six weeks' duration. Improvement was marked in a few hours, and in ten days the boy was up and had gone to the country.

There have been eight women patients who have been under treatment for a sufficient length of time to report. These have been under the care of my associate, Dr. L. C. Spengler. All but two of these patients were referred by male patients who were

here under treatment for gonorrhea. The other two had definite history of exposure. Six had positive smears on the first visit; two of the patients had negative smears repeatedly but definite lower abdominal pains and massing in the pelvis. Both of these patients' husbands were under treatment here for gonorrhea. In spite of the repeated negative smears, they were treated as true cases of gonococcus infection. The duration of the symptoms ranged from one to four weeks in five patients, seven weeks in one patient, four months in another, and over one year in the last. All cases were put on sulfanilamide treatment in addition to the usual douches, rest, etc.

Of the six patients who had positive smears, five became negative within two weeks; one remained persistently positive and was under our observation for only fourteen days, during which time her symptoms had remarkably improved, though the smear was still positive and her adnexal massing still present. Of the eight patients, five had adnexal massing, and in four of these the massing disappeared completely in seventeen to thirty-five days. One patient had a Bartholin gland abscess which had ruptured previously but was still exquisitely tender on her first visit. After six days of sulfanilamide therapy, the Bartholin gland was barely palpable and not tender. The time of sulfanilamide therapy was from fourteen to thirty-five days. Symptoms disappeared on an average of seven to fourteen days. Reactions were present in four and absent in four. One patient, after taking sulfanilamide for two weeks, had a chill and high fever. Other reactions were nausea, lassitude and headache.

This paper does not aspire to cover a field in which there are more than a million new cases a year, exclusive of the carry over. Hyperthermia has not been given a fair test by me. Its objections over-ruled its uses. Theelin in the vulvo-vaginitis of children has definitely established its place, but we rarely have this type of patient.

Sulfanilamide completely failed in nine of the one hundred and twenty-four in our series; but it was probably beneficial in others, markedly shortening the course and relieving symptoms in a phenomenal manner in about seventy-five per cent. It has several serious drawbacks: (1) Too much publicity has created an impression that gonorrhea is no longer a disease to be feared and that it can be cured easily; (2) It may lead to self-prescribing, and a patient,

feeling badly but under no supervision, may increase his dosage. We suggest that all prescriptions be written with "no refill" on them. Druggists much prefer this, but are frequently put in a difficult position by a patient demanding the drug with no qualifications as to how it is to be used.

Our routine is never to promise a cure but to state that, with cooperation and frequent examinations over three months, probably eighty per cent of new cases may expect a cure within that time. Exercise, alcohol, sexual excitement and irritation from trauma or too strong drugs are the factors tending to produce chronicity. Mild drugs producing little tissue reaction not only definitely shorten the course, but enable one to see these patients sufficiently often to obtain their cooperation. It is necessary to call their attention frequently to common errors in their hygiene, for example, care in amount of water drunk. The urine should not be so concentrated as to produce irritation, nor yet so dilute as to produce voiding oftener than once every two hours. Dressings which interfere with drainage are to be avoided. Highly-seasoned foods and other indiscretions can only be avoided by frequent periods of observation. A slight secretion is more dangerous to society than a profuse one. Many times gonococci are persistent to the great disappointment of both physician and patient. At their first visit, patients may be excited and terribly worried, or the opposite, and think their condition amounts to little. In either event, they will remember little of what is said on the first visit, and an educational course during the period of treatment is a necessity.

The only infection of the eye to come under our observation was a child of four, seen through the courtesy of Dr. H. B. Stone, Jr. This child also had a vaginitis positive for the gonococcus. The eye cleared in forty-eight hours, as it probably would have done under the usual treatment, but the vaginitis also had improved and was negative for gonorrhea on leaving the hospital.

This group of one hundred and twenty-four is

taken from private practice and is above the clinic type in intelligence. It is of interest that only one in the forty-seven cases of acute anterior infection showed a positive Wassermann and one positive darkfield, and only two of the remaining group were positive. During this period a number of luetic patients came under our observation, but were not found incidentally in the treatment of the gonorrhea. We feel that it is of particular importance that a Wassermann be taken before discharging any venereal patient.

The attitude of the public toward this disease is largely what we make it. The practice of saying "a woman is not infected because we get a few negative smears" leads to no end of misinformation. The smear must not be taken from the vaginal wall, but an attempt must be made to get the secretion from the urethra after pressure on the Skene's glands, as well as from the cervical glands. A slight urethral secretion in the male is frequently positive. We have found ten such who had used sulfanilamide from one to four weeks with no local treatment and in whom there was little remaining secretion. A mild local treatment keeps the patient under observation and avoids that false sense of security which perpetuates venereal diseases.

My impression on re-reading this paper is that we say too much for this drug. Doctor Spengler and I have gone over these cards together and checked the results carefully. Without a number of re-checks over several months, a cure can not be credited as such. Many who are cured do not return, but those who have trouble are with us daily. Sulfanilamide is only one factor in the care of this condition which is essentially a different problem in each patient and each symptom deserves careful consideration. The physician who cares for these people assumes a serious responsibility. A careless remark may lead to a long chain of sickness and worry in one or more persons, while careful attention to apparently minor details may avert disaster.

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MULTIPLE POLYPOSIS OF THE COLON—SURVEY OF THE SURGICAL METHODS OF TREATMENT AND REPORT OF AN UNUSUAL CASE.

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At the present time the classification of polyps of the colon and rectum is not entirely satisfactory in that the literature is confusing regarding what constitutes a clinical case of multiple polyposis. To one author a single polyp fulfills the requirement of the diagnosis, while a second author looks upon the diagnosis of multiple polyposis as indicating disseminated polyps extending from the caecum to the lower rectum. In 1925, Erdmann and Morris¹ classified polyps of the colon into two general types: (1) the adult (acquired), and (2) the adolescent (congenital, disseminated). In 1934, Wesson and Barger² classified polyps of the large intestine into two general types: (1) post-inflammatory (pseudopolyposis), and (2) true polyps or neoplasms; solitary or multiple. These two classifications are essentially the same in their scope, and they are more or less accepted today. Acquired polyps or pseudopolyposis results from a previous inflammatory process in the colon or rectum encountered in latent cases of ulcerative colitis, amoebic dysentery, and other disease of the large bowel where an irritative factor is present. True polyps are not a result of inflammation. This type occurs as a hereditary disease complex, develops from the age of puberty to the age of thirty most commonly, and is a true neoplasm. Broders³ in discussing the classification of multiple polyposis, used the term polyposis for one or two polyps, but preferred the term polypoidosis to signify that the large intestine was studded with polyps from the anus to the caecum.

Regardless of the type of polyposis present in the large intestine, it as a well-known fact that eventually metamorphosis into malignancy will take place in from 40 to 60 per cent of these patients. The surgical treatment of a solitary polyp as a rule does not offer any difficulty; however, in the treatment of disseminated polyposis where the polyps extend from the caecum to the anus, the surgeon is faced

with an extremely formidable procedure. In order to assure such a patient that he will not develop carcinoma, a colectomy must be carried out.

Since Menzel's first report of a case of polyposis in 1721, attempts to eradicate the disease and to prevent the development of carcinoma have been made by a variety of surgical methods. Hullsiek³ in 1928 reported in some detail the surgical procedures and other pertinent facts relative to multiple polyposis in the 127 cases reported in the literature up to that time. Of this group, fifty-one cases had been treated by surgery. The surgical procedures carried out were as follows: colostomy 8; "removal of the rectum" 5; ileostomy alone 5; colostomy with the removal of a part of the colon 4; appendicostomy 3; resection of intussusception 3; total colectomy with ileostomy 2; ileoproctostomy 1; ileosigmoidostomy 7; resection of the colon 2; "excision of a mass at the sigmoid flexure" 1; complete colectomy with five inches of the ileum 1; exploratory 2; resection of a part of the sigmoid 3; resection of the anal canal and the rectum 1; total colectomy and ileosigmoidostomy 1; ileocolostomy with the removal of a part of the ileum, transverse colon and ascending colon 1; and descending abdomino-perineal resection 1. In a few of the cases the surgical procedure employed was not described.

Since 1928, there has appeared in the literature numerous cases treated by a further variety of methods, all of which are now directed toward the complete eradication of the polyps or resulting malignancy. Rankin⁴ and ⁵ in 1934, in a supplementary report to his paper in 1931, advised a three-stage operation: (1) ileostomy, (2) colectomy, and (3) abdomino-perineal resection of the rectum. In suitable cases he considers a second type of a three-stage operation: (1) ileosigmoidostomy, (2) colectomy, and (3) fulguration of remaining polyps. Lockhart-Mumery⁵ in 1934, advised total colectomy with local treatment of the polyps in the rectum, and careful observation. Dixon,⁶ in 1935, reported a case of a

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sigmoid polyp treated by the exteriorization method of Mikulicz. Smithwick,⁷ in 1936, reported a patient with an adenoma of the sigmoid upon whom a caecostomy was performed followed later by a resection of the involved portion of the bowel and a primary end-to-end anastomosis. Mayo,⁸ in 1936, suggested five stages in the treatment of disseminated polyposis: (1) electro-fulguration of the rectal and rectosigmoid polyps, (2) end to side ileosigmoidostomy and right hemicolectomy, (3) left hemicolectomy, (4) retrograde examination and fulguration through the colostomy stoma, and (5) closure of the colostomy stoma. Mayo called attention to the fact that a primary ileostomy should be carried out as a preliminary to the five-stage operation where secondary infection involves the entire colon. In 1937, Miller and Sweet¹⁰ reported a colectomy in two cases, and they also were of the opinion that the entire large intestine should be removed for disseminated polyposis; they preferred the three-stage method of Rankin.

The following case report illustrated a method of removing a large polyp from the rectosigmoid junction which we have been unable to find described in the literature:

CASE REPORT

A wool buyer, aged 65, came to the medical outpatient department of the University Hospital on December 4, 1935, complaining of watery and sometimes bloody stools. These symptoms had been present for six months. There was no family history of polyps or malignancy.

During the digital and proctoscopic examination a polyp 1 cm. in diameter 2 inches above the anal canal, and internal hemorrhoids were found to be present. Sigmoidoscopic examination revealed the presence of the above described polyp just above the anal canal, and extending from a distance of 11 cm. above the anal outlet to a distance of 22 cm. from the outlet the rectum and sigmoid showed a generalized and diffuse polyposis. No normal mucous membrane was present in this region and the involved mucosa was thrown into folds. The involved area was blanched in color in contradistinction to the normal mucosa above and below this lesion. The lumen of the bowel was adequate; however, with the slightest trauma bleeding was easily produced. The biopsy report was "rectal polypus showing

atypical hyperplasia." Roentgenological examination revealed "irregularity in the contour of the margins of the rectosigmoid junction; apparently an obstructing lesion." The patient was discharged on a soft low fiber diet and liquid petrolatum. On February 14, 1936, he returned to the clinic without relief of his symptoms. The lesion had not changed in appearance, and a second biopsy report read "benign rectal polypus." At this time the patient was advised to have an operation but refused on the grounds that he would not tolerate a colostomy. He returned again on January 28, 1937, with all of his symptoms exaggerated: profuse diarrhea, daily bleeding from the rectum, and protrusion of a mass from the anus. The hemoglobin had decreased from 105 per cent to 81 per cent. Sigmoidoscopic examination revealed no change in the lesion. Another histological examination read: "rectal polypi showing highly atypical epithelium proliferation, but no infiltrative growth and nothing upon which a diagnosis of malignancy can be based." Barium enema revealed a large, irregular polyp of the rectosigmoid junction (see illustration). The patient agreed to have an operation, but strongly requested that a permanent colostomy be avoided.

On February 12, 1937, the polyp just above the anal canal was excised and a temporary left inguinal colostomy was established by F. A. Collier. The polyps were observed to extend from 2 inches above the rectosigmoid junction down into the ampulla of the rectum below the peritoneal reflection from the rectum. The remaining colon was normal. The pathological examination showed no evidence of malignancy.

On March 6, 1937, the second stage of the operation was carried out by F. A. Collier and the author. The sigmoid was opened above the lesion by a 15 cm. longitudinal incision, the incision being carried downward to the reflection of the peritoneum from the rectum. The normal mucosa extending from 4 cm. above to 6 cm. below the rectosigmoid junction was displaced by multiple whitish and friable polyps. Grossly the lesion was characterized by the absence of islands of normal mucosa, and by the overlapping of numerous longitudinal folds, the latter being a direct result of the marked hyperplasia and hypertrophy of the involved mucosa. The colon and rectum were otherwise negative and free of polyps. By sharp dis-

section the polyps and submucosal connective tissue framework of the polyps were excised, leaving the serosa, muscular layers and a portion of the submucosa *in situ*. The normal mucosa below the polyps was pulled up and sutured to the normal mucosa above, closing the longitudinal incision in the sigmoid and rectum in a transverse manner by two rows of sutures reinforced by epiploic appendages from the sigmoid. The pathological diagnosis was "rectal polypus showing chronic inflammation and edema of submucosa. No evidence of malignancy."

On the twenty-first post-operative day the spur of the colostomy was crushed, and four days later he was having normal stools by rectum. On the thirty-sixth post-operative day the patient was discharged with the expectation of a closure of the colostomy at a later date providing spontaneous closure did not take place. On May 11, 1937, the colostomy was closed under local anesthesia. On the eighth post-operative day he was discharged with the wound practically healed, and he was having from two to three normal stools a day.

Two methods were available for the eradication of the polyps in this case: (1) Abdomino-perineal resection and (2) Temporary colostomy, 2nd stage resection of the lesion with reconstruction of the defect, and closure of the temporary colostomy. Fortunately, in view of the final result, the patient refused the first procedure. Fulguration of such an extensive lesion was out of the question. Temporary colostomy followed by a second stage resection of the lesion was the only alternative procedure; however, resection of the rectosigmoid with end-to-end anastomosis in view of the lesion extending down into the rectal ampulla, did not seem to be any too practical. The rectosigmoid was then opened at the second stage and the polyp-bearing area of mucosa was entirely excised, stripping the mucosa from the submucosa and muscular layers. The defect was reconstructed by further mobilization of the normal mucosa, and by closing the longitudinal incision in the colon in a transverse manner, pulling the mucosa up from the rectal ampulla and down from the sigmoid posteriorly. Anteriorly the mucosa could easily be approximated.

In the treatment of multiple polyposis each case offers an individual problem. The method of attack not only depends upon the type of case and the general condition of the patient, but depends upon

the skill of the operator and the cooperation of the patient. In disseminated polyposis extending from the caecum to the anus we prefer a three-stage procedure; that is, (1) ileostomy or ileosigmoidostomy depending upon whether the lower intestinal tube can be preserved by the fulguration of the polyps, (2) colectomy extending down to the midsigmoid, and (3) abdomino-perineal resection providing the rectum and low sigmoid cannot be preserved by repeated observation and fulguration of the polyps as indicated.



Air injection following barium enema reveals the large polyp at the rectosigmoid junction.

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WHAT SUPPORTIVE EVIDENCE IS THERE THAT LYMPHOPATHIA VENEREA IS A DISTINCT DISEASE ENTITY?*†

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The importance of lymphopathia venerea to every branch of medicine and surgery is yet to be realized. The practitioner and the general surgeon dismiss it as the proper field of the specialist, and the latter, the cardiologist, laryngologist, etc., ignores it entirely as having no connection with his subject. In answer to this situation be it said that the sequelae of lymphopathia venerea are manifold and so far-reaching that it behooves every physician and surgeon in whatever field to inform himself on this subject for the greater welfare of his patients.

Although the usual site for this infection is the inguinocrural region, reports of extragenital manifestations have so multiplied that such lesions are now considered as much an accompaniment of this disease as edematous ankles are of some types of cardiac failure. The author's series of 356 cases features axillary and neck manifestations,^{7, 28} and the literature yields reports of tongue lesions,^{11, 14, 15, 34} lymphogranulomatous glossitis marginata, lichen of the tongue,¹⁴ cervical adenopathies,^{31, 21} rheumatism,^{20, 23} enlarged spleen,^{30, 32} elephantiasis of various parts,²² erythema nodosum and multiforme,^{18, 19, 25, 31} finger adenopathies,³³ pityriasis rubra Hebrae,³⁴ conjunctivitis with adenopathy,²⁴ and the genito-anorectal syndrome.^{9, 10, 12, 16}

DeWolf and Van Cleve¹⁷ believe that any apparent rarity of the disease is due to improper diagnosis and it is now known that the disease occurs with comparatively equal frequency in all countries⁴ and in both sexes.^{27, 29} The great preponderance of reported male cases in the early literature was un-

doubtedly due to the clinical variations owing to the difference in lymphatic drainage of the male and female. The age incidence is broadly between fifteen and forty-five, or the period of greatest sexual activity.²⁶

It has been suggested that the failure to include lymphopathia venerea in the possible etiologic causes of apparently unassociated conditions may be due to the fact that many still doubt that this is a distinct disease entity, with a characteristic, possibly pathognomonic, histopathology, and a specific diagnostic skin test. The discussion of these three important points is the chief object of this paper.

A review of the experimentation so far conducted on animals will leave little doubt as to the first of these questions.^{2, 3} It may be mentioned that for the most part these investigations have been performed by some of the most eminent scientists in the fields of research—Levaditi, Hellerstrom, Laederich, Ravaut, Jersild, Barthels, and others. Many animals have been tested, but the field of utility has finally been narrowed down to white mice, rabbits, guinea pigs, and monkeys. The methods employed include injections by the subcutaneous, intravenous, intramuscular, intracerebral, intraperitoneal, and intratesticular routes. By the intracerebral injection of gland suspensions, Hellerstrom succeeded in transmitting the disease to monkeys, as shown by the production of a generalized leptomeningitis which presented the typical histologic changes described by Nicolas and Favre. Subsequent inoculations were carried out to a second animal, and in one instance to the eleventh. Following in his footsteps, other scientists have passed the virus through even more numerous stages; the Kamn

*Read before the Academy of Medicine, Richmond, Va., October, 1936.

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strain the most virulent has been passed through twenty monkeys without attenuation. Antigens prepared from animals so infected give positive Frei tests when injected intradermally into patients with this disease. From these observations it is deduced that the causative factor of lymphopathia venerea is an ultramicroscopic filterable virus. Laederich produced a typical encephalitis in an ape which was inoculated with an emulsion of material obtained from an adenopathic ganglion of a guinea pig which had been infected by implantation with a fragment of rectal mucosa from a patient. Later Levaditi succeeded in demonstrating the presence of the virus (in liver, spleen, kidneys, and to some extent in blood) in seven of eight cases by the intracerebral inoculation of monkeys with macerated tissue of and pus from the swollen glands. In one case, Levaditi and his co-workers produced the disease by injecting the virus obtained from the brain of an infected monkey into the skin of the prepuce of a paralytic patient. Further, they found that by injecting white mice with an emulsified blood from primarily inoculated mice, they were able to demonstrate the virus in the blood of all organs examined.

The histologic picture is considered pathognomonic by many observers. Ordinarily a subacute adenitis is shown by edema and hyperplasia of lymphoid tissue. Many abscesses are present, rarely of the stellate type, around which is noted a zone of epithelioid cells, often arranged in palisade formation. Cellular debris, polymorphonuclear leukocytes, and monocytes are contained within the abscess cavities. Besides the multiple areas of suppuration, the glands are filled with granulation tissue consisting of cells with more than one nucleus, an occasional giant cell of the Langerhans type, numerous plasma cells and fibroblasts. It has been repeatedly mentioned that the giant cells are located frequently at the outer border of the epithelioid cells, although in our studies we have been unable to confirm this. The capsule is thickened and periadenitis is a constant finding. Engorgement of the blood vessels and dilatation of the lymph sinuses are seen.

In an attempt to evaluate the specificity of the Frei test, the author,¹ at Collier F. Martin's suggestion, employed a control antigen obtained from normal glands of patients not affected with lymphopathia venerea.

A sterile solution of leukocytes was also utilized. Wang advocates a control of phenol 0.25 per cent in normal saline solution. The material is diluted with physiologic salt solution, as in the preparation of the specific antigen, after which one-tenth c. c. is injected into the forearm of the patient. When the control test is noted (at the time the Frei reaction is read—forty-eight to seventy-two hours after injection), no elevation, pustule or erythematous zone should be present. Such constitutes a negative control test. To rule out further such diseases as syphilis, gonorrhea, tuberculosis, and ulcus molle, which have been con-



Inflammatory stricture of the rectum (tubular variety). This is the type most frequently encountered in lymphogranuloma venerea.

sidered in the search for the etiologic factors in lymphopathia venerea, certain laboratory tests were performed.

| Disease | Reaction | Number |
|----------|----------|-------------|
| Syphilis | Negative | 71 |
| | Positive | |
| | +4 | 22 |
| | +3 | 3 |
| | +2 | 0 |
| | +1 | 1 |
| | | 26 or 26.8% |
| Total | | 97 |

Smears for the gonococcus were obtained in a limited number of cases. Two smears were taken and each was stained by the Gram technic. The results were noted as follows:

| | |
|--------------------------|------------|
| Rectal Smears for G. C. | |
| Negative | 28 |
| Positive | 6 or 17.6% |
| Total | 34 |
| Vaginal Smears for G. C. | |
| Negative | 41 |
| Positive | 13 or 24% |
| Total | 54 |

For chancroidal infection the Reenstierna test was employed. Forty-one cases showing a positive Frei test were injected intradermally with one-tenth c. c. of the Dmelcos vaccine (suspension of B. Ducrey and streptococcus). Thirty-eight gave a negative reaction. Of the three showing a positive Reenstierna, two presented clinical evidence of chancroidal infection.

| | |
|----------------|--------|
| | Number |
| Negative | 38 |
| Positive | 3 |
| Total | 41 |

Tuberculosis.—To determine the presence or absence of tuberculosis is a most perplexing problem, especially when tuberculin is used. Either it is inert in a large percentage of instances, or there is considerable chance of falsely interpreting many reactions as positive. The new standard tuberculin termed “purified protein derivative” (P. P. D.), prepared by Seibert and adopted by the National Tuberculosis Association, is considered of greater value than O. T. in that it is free from salts and non-specific proteins and its potency is reproducible. Forty-five of the patients in our series were tested intradermally with P. P. D., using the first dilution (0.00002 mg.). Their reactions were read and measured in forty-eight hours. The second dilution (0.005 mg.) was injected in cases that were negative to the first. The results follow:

| | |
|--|--------|
| Reaction | Number |
| Negative | 33 |
| Positive | |
| 1. Reaction shows area of swelling measuring 5 to 10 mm. in diameter .. | 1 |
| 2. Reaction shows area of swelling measuring 10 to 22 mm. in diameter .. | 5 |
| 3. Reaction shows area of swelling exceeding 20 mm. in diameter | 3 |

| | |
|--|----|
| 4. Reaction shows area of swelling and definite necrosis | 3 |
| Total | 12 |
| Total | 45 |

Of the twelve cases showing a positive P. P. D. test, five presented clinical and histologic evidence of tuberculosis: Pulmonary 2; fistula 1; nodule 1; anal skin 1.

In an effort to determine the percentage of positive Frei tests in various affections other than lymphopathia venerea, we^{6, 8} solicited the cooperation of our colleagues in allied clinics. Negative Frei tests were obtained in the following cases:

| | |
|---|--------------|
| FREI TEST CONTROLS | |
| | No. of Cases |
| Healthy | 44 |
| Colitis, various forms | 21 |
| Syphilis—Skin | 4 |
| Stomach | 1 |
| Tuberculosis—Intestinal | 3 |
| Pulmonary | 12 |
| Gonorrheal urethritis and vaginitis | 9 |
| Cholecystitis | 9 |
| Gastric or duodenal ulcer | 7 |
| Carcinoma larynx | 1 |
| Carcinoma prostate | 4 |
| Carcinoma breast | 1 |
| Carcinoma stomach | 5 |
| Lipoma | 3 |
| Actinomycosis | 1 |
| Hodgkin's disease | 1 |
| Thyroid disease | 3 |
| Fractures | 4 |
| Pyelitis | 4 |
| Influenzal conditions | 14 |
| RECTAL | |
| Carcinoma rectum | 9 |
| Benign adenoma | 3 |
| Post-anal ulcer and infection | 12 |
| Hemorrhoids | 47 |
| Abscess and fistulae | 34 |
| Tuberculous fistulae | 2 |
| Pruritus ani | 6 |
| Total | 264 |

It may safely be said that the evidence is conclusive that lymphopathia venerea is a disease entity quite distinct in itself and that the Frei test is of utmost value in the diagnosis. In attempting to test the specificity of this test in rectal stricture, we gathered data from physicians throughout the world, which is presented in the table below.⁵

These figures are convincing, not only as to the specificity of the Frei test, but also as to the etiology of rectal stricture.

| Author | City | No. of inflammatory rectal strictures | % positive Frei test |
|----------------------------|---------------|---|----------------------------|
| Curth | New York | 50 | 100 |
| M. Hill | Los Angeles | 34 | 100 |
| Dalton & Ricketts | Indianapolis | 15 | 100 |
| Alley | Lexington | 20 | 100 |
| Vander Veer | Philadelphia | 21 | 100 |
| Grace | New York | 20 | 100 |
| Cole, DeWolf, Van Cleve | Cleveland | 13 | 100 |
| Lehman & Pipkin | San Antonio | 3 | 100 |
| Streicher | Chicago | 11 | 100 |
| Marino | Brooklyn | 4 | 100 |
| Grossman | Harrisburg | 4 | 100 |
| Hayden | Boston | 20 | 100 |
| Howard & Strauss | New Haven | 5 | 100 |
| Bloom | New York | 7 | 100 |
| Coutts | Chile | 2 | 100 |
| Wang and Shen | Nanking | 2 | 100 |
| Templeton & Smith | San Francisco | 1 | 100 |
| Rainey & Cole | St. Louis | 14 | 100 |
| Lichtenstein | New York | 56 | 98 |
| Martin & Bacon | Philadelphia | 356 | 93.8 |
| Sulzberger | New York | 6 | 96.7 |
| Rajam | Madras | 22 | 90.9 |
| Bensaude & Lamb- ling | Paris | 143 | 88 |
| Lee & Staley | Cincinnati | 14 | 87 |
| Stillman | New York | 6 | 83 |
| Pennoyer | New York | 22 | 81 |
| Corachan | Madrid | 3 | 75 |
| Hayes & Burr | Houston | 106 | 60.4 |

The only real problems which have so far yielded very little before the persistent onslaughts of research are the etiology and treatment, of which the solution of the former will be the harbinger of the latter. To this, the scientific world looks forward hopefully.

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A CONVENIENT METHOD FOR THE FRACTIONATION OF LIVER EXTRACTS AND THE PREPARATION OF A PARENTERAL ANTI-PERNICIOUS ANEMIA EXTRACT.

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While investigating the ammonium sulfate separation method for the isolation of the substance in liver which protects rats against carbon tetrachloride or chloroform poisoning,¹ it was found that one of the fractions obtained was high in the anti-pernicious anemia factor. Furthermore, it could be very readily prepared in a form suitable for parenteral administration. This preparation has been used in the hospitals of the Medical College of Virginia for several years and by a number of other physicians with very gratifying results. Since the method of preparation is relatively simple and the liver-protective substance is a by-product in its manufacture, publication of the procedure seems justified.

A concentrated aqueous extract of hog liver representing approximately 10 gm. per cc., from which most of the heat-coagulable materials have been removed, is warmed in a water bath to a temperature of approximately 60° C. To each 1000 cc. of this solution 2400 cc. of ethyl alcohol of about the same temperature is added with stirring. The precipitate which forms is filtered off after cooling and 2000 cc. of a saturated aqueous solution of ammonium sulfate added to the filtrate. The solution is then thoroughly shaken. On standing it separates into two layers: above, an alcoholic layer and, below, a

watery layer containing a great deal of precipitated ammonium sulfate. The upper layer is syphoned off and 1500 cc. of alcohol added to it to precipitate excess ammonium sulfate. The solution is filtered after being cooled in a refrigerator for several hours. The filtrate is then evaporated under reduced pressure to approximately 170 cc. It is then placed in a refrigerator and cooled over night.

The precipitate contains the liver protective substance previously reported.¹⁻²⁻³ The supernatant fluid, rich in the anti-pernicious anemia factor, can be prepared readily for parenteral use. After centrifuging it, a suitable preservative is added and the solution kept in a cold refrigerator for at least several days for further precipitation. It is filtered cold, the filtrate diluted to the desired volume and the reaction adjusted with solid sodium bicarbonate until just acid to litmus. It is then sterilized by filtering through a Berkefeld filter and bottled in sterile vials. The figure shows the responses of typical pernicious anemia patients in relapse.

The method obviously gives a good separation of the pernicious anemia factor since the administration of only one cc. daily, (derived from 33 grams of liver), is sufficient to give a standard reticulocyte response in at least some cases of uncomplicated pernicious anemia. One apparent advantage of this method over the usual methods for obtaining a parenteral anti-pernicious anemia preparation would seem to be in its alcohol economy; further, if the

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having been given morphine, grain $\frac{1}{4}$, to alleviate his pain. He was not knocked unconscious, but was immediately blinded by the explosion.

EXAMINATION: There was a first degree burn of the skin of lids and forehead with rather marked edema of lids. No emphysema or fractures palpated. The lashes and eyebrows were burned to the skin's margin.

There was marked photophobia and lachrymation and, before the edematous lids could be opened, three drops of butyn (1 per cent) had to be instilled at two-minute intervals. The entire cornea of each eye was a dull, grayish opacity, strippled with fine black particles of burnt powder. The vision was only light perception in each eye. The palpebral and bulba conjunctiva had marked hyperemia and chemosis and was likewise peppered with fine powder particles. There was no mark of perforation in the conjunctiva or cornea. The intraocular tension was apparently normal to palpation. Eye movements showed good coordination.

After using three more drops of butyn (1 per cent) in each eye, the surface of each cornea was scraped off with a Wheeler knife, thus removing the fine powder particles, at the same time leaving a fairly clear corneal substance with a few scattered superficial punctate, whitish opacities in the lower segment of each cornea. By stretching the conjunctiva and scraping with the knife, the many burnt particles in the conjunctiva were easily removed. After irrigation of each eye with normal saline, panocaine ointment ($\frac{1}{2}$ per cent), bichloride ointment (1-5000), and atropin ointment (1 per cent), were applied to each eye and patched. Over the burnt skin surface butesin picrate (1 per cent) was applied.

Patient was immediately hospitalized. Ordered codein, grains one, every four hours, if necessary, 1500 units of tetanus antitoxin, liquids forced General diet. An X-ray was not considered necessary.

The patient was seen in six hours and redressed. There was marked lachrymation, the cornea continued clear. The irrigation, ointments and patch were used as before.

Starting on the second day, the patient was seen and dressed, as mentioned above, twice a day. A smooth, solid, sterile glass rod was used to wipe in the fornix of the conjunctiva, both upper and lower lid, every other day during his stay in the

hospital. This was to prevent adhesions of conjunctiva of the lids to the eyeball. The cornea continued clear and patient could count fingers at three feet with each eye on the third day. At the same time, the fundi appeared apparently normal but not distinctly seen. Small vesicles of the palpebral conjunctiva were seen on the third day but they disappeared in about thirty-six hours. No stain of the cornea after second day.

From the third day to the eighth day, the patient was dressed daily as mentioned above.

On the eighth day, the patches were removed and dark glasses given. Irrigations with normal saline, B.i.d., and bichloride of mercury ointment (1-5000) to follow. This treatment was continued B.i.d., during the remaining three days in the hospital and two weeks after returning home.

On the eleventh day, patient was discharged. At this time the fundi appeared normal, fingers could be counted at five feet, cornea clearing and did not stain. Tension was apparently normal.

There was slight hyperemia of conjunctiva. At no time was there a purulent discharge.

Patient was seen daily at the office for the next week and twice a week thereafter.

On December 17th, by slit lamp examination, cornea was found clear except an occasional small superficial punctate opacity in the lower segment of each cornea, which disappeared in the next week.

The subsequent course was uneventful and on January 20, 1937, the following prescription was given

O. D. + .25 sph + 1.00 cyl. X 100 20/20

O. S. + .25 sph + .75 cyl. X 90 20/20.

Cornea, lens, and vitreous found clear, P.C.B. good, muscle action good. Conjunctiva clear and no adhesions. Fundi normal and projection normal.

On February 12th, the above prescription checked and found satisfactory. No change in findings mentioned above. Patient was able to attend to his studies with ease.

CONCLUSION: A case of gun powder burn of lids, cornea and conjunctiva, all of which were superficial. Though the entire corneal epithelium was coagulated and therefore removed, it regenerated in about thirty-six hours.

It is evident from the gratifying results that complete even radical early cleansing is indicated. This case suggests a rule that goggles should always be

furnished and worn by the student while in the laboratory where accidents may occur. Experience and statistics from accident insurance cases has proven that there has been a marked decrease in eye accidents incident to the use of goggles. To answer one

objection to the wearing of goggles, it is rare that you hear of broken eyeglass getting into or cutting the eye.

Medical Arts Building.

COMPARATIVE STUDY OF ETIOLOGIC FACTORS IN ALLERGIC AND PSYCHOPATHOLOGIC CONDITIONS.*

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The purpose of this paper is to study the relationships of allergy and psychopathology in order to determine if these two fields possess the same *modus operandi*. In studying the etiology of these two fields, we shall try to ascertain to what degree, if any, they are similar or dissimilar. In other words, we shall try to add points "pro" or "con" to the theory of psychoallergy¹ which states, in brief, that the laws of allergy seem to parallel the laws of psychology and seem to have interrelated counter parts.

It has been noted that some therapeutic procedures, employed in the treatment of allergic conditions, have been used with some success in the treatment of various conditions in the field of neuropsychiatry. We shall attempt to show the reasons for these facts in the present study.

In an endeavor to follow the etiologic points in allergy, and as a guide, we have elected to follow some factors suggested by Bray.²

Heredity:—The factor of heredity is a difficult one to evaluate, as everyone knows that reliability, as regards to the sources of information on this subject, vary markedly.

Concerning the inheritance factors in allergy, Rackemann³ states that "this inheritance of allergy—of the tendency to become hypersensitive—may be transmitted from the mother, from the father or from both parents at once, and the incidence of sensitiveness in the offspring is greater if the inherit-

ance is bilateral than if it comes from one side of the family only." Bray⁴ writes that very little is known concerning the nature of the inheritance factor in the allergies, and that "statistical surveys have shown merely that the majority of the allergies have one or more antecedents with some recognized form of allergy, and that a certain proportion of the children will develop symptoms." Bray goes on to say that "other of these children, whilst not manifesting any sensitivity themselves, may again transmit the tendency to their children." He brings out the point that a tendency is transmitted which allows sensitiveness of some kind to develop to some substance. "Hay-fever sufferers are most likely to suffer from hay-fever than asthma, and the reverse," according to Bray, who adds that "this hereditary transmission cannot be due to hypersensitiveness to a particular protein or group of proteins, since the causative agent generally differs in parent and offspring. What does appear to be transmitted is an unusual capacity for developing specific reactivities to various foreign proteins. . . ."

Regarding the role of heredity and mental diseases, Katz⁵ concluded, in a study of the family constellation in the development of mental diseases, that the size of the family did not appear to have a correlation with the incidence of psychosis. He concluded that the order of birth of the siblings seemed to bear no relation to the incidence of psychoses, but that a preponderance of older sisters in the family was suggested as a predisposing factor in male dementia praecox. Of course, psychic conflict might well play an important part in the production of mental disease in such cases, as, in our opinion, with such

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a set-up, this is a definite form of psychoallergen which might produce a psychoallergic state in the male member of the family.

Berlit⁶ in an interesting survey, which had to do with the incidence of insanity among relatives of employees of a hospital in Saxony, studied 1,807 siblings, with the following percentages of incidence:

| | |
|--------------------------------|------|
| Schizophrenia | 0.79 |
| Hysteria | 0.41 |
| Psychopathic personality | 2.4 |
| Psychopathic-like states | 4.8 |
| Suicide with psychoses | 4.6 |
| Wandered away from home | 1.13 |

He found the following percentage of incidence in 724 parents who showed abnormal mental states:

| | |
|--------------------------------|------|
| Schizophrenia | 0.15 |
| Manic-depressive | 0.47 |
| Senile psychoses | 0.95 |
| Hysteria | 0.27 |
| Suicide with psychoses | 1.3 |
| Psychopathy | 2.1 |
| Psychopathic-like states | 4.8 |

Berlit added that the source of error lay in the exact psychiatric diagnosis.

Myerson,⁷ in regard to vertical transmission in certain mental diseases, concluded that "paranoid diseases tend to paranoid states, perhaps finally to dementia praecox states, and manic-melancholic diseases are in the main followed by manic-melancholic diseases, but in a certain number, especially of doubtful cases, by dementia praecox. In volitional and senile states, if paranoid, trend towards paranoid states and dementia praecox. Manic-depressive states of involution and senium trend towards manic-depressives and states of dementia praecox, especially the latter.

Dementia praecox, in an ancestor, trends toward dementia praecox in the descendents with a certain scattering incidence of imbecility which may be early dementia praecox.

Myerson concludes that the total taint of the insane against that of the sane is as:

1.3 : 1 (Koller)

1.1 : 1 (Diem)

and that mental disease, as a taint in the heredity of the insane against that of the sane is as:

2 : 1 (Koller)

4.5 : 1 (Diem)

and that parental taint of mental disease in the heredity of the insane against the sane in the heredity of the sane is as:

3 : 7 (Koller)

8.3 : 1 (Diem)

and that character anomalies in the parents of the insane are to the sane in the parents of the sane as:

3 : 1 (Koller)

2.33 : 1 (Diem)

Noyes⁸ states that "heredity seems to have a strongly predisposing influence in the manic-depressive psychoses, yet we know very little as to the processes by which it acts." Strecker and Ebaugh⁹ state that "heredity as a factor in causing mental disease has been shown to be over-evaluated as an aid in discussing either diagnosis or prognosis, while some types of disease seem to be more prevalent in certain families; the Mendelian ratio does not apply strictly to any. Insanity is not a unit character whose transmission can be traced. It will be repeated that the number of mentally ill people from "tainted" families is only slightly higher than that of the general population.

Dorcas and Shafer¹⁰ state that "more than half of the cases (of schizophrenia) have a record of mental illness in the family, but since many of the cases show no such family record, heredity must be viewed as merely one of the contributing factors in the development of the malady."

In discussing the relationship of heredity in cases of psychoneuroses, these same authors state that "mental disorders have been numerous in the ancestry of neurasthenic patients, but we must keep in mind the fact that we know practically nothing about the comparison with the ancestry of the so-called normals. We must also consider the fact that the patients have had to live with these unhealthy relatives, and their conflicts with this environment may be of greater importance than the inherited constitution."

Sajous¹¹ thinks that heredity only acts as a predisposing influence, through parental neuroses or psychoses, in the production of neurasthenia.

Factor of Age of Onset:—In cases of allergy, according to Bray,¹² the conditions of urticaria, asthma and eczema have very much the same types of curves as to their age of onset and percentage of cases. Peculiarly enough, hay-fever cases show about fifteen

per cent in the age group of one to nine years of age and increase to nearly thirty per cent in the second decade of life. The curve of migraine is different than the rest in that it is more steady in type. Bray states that "most allergic conditions commence early in life, and with the exception of hay-fever, tend to become less frequent in their onset with advancing years. I would stress 'at their onset' for undoubtedly a greater number manifest symptoms in later years than the chart would suggest, but in most cases the sufferings have extended over many decades. The younger the patient the more likely are strain reactions to be positive; the older the patient the less hopeful the prognosis."

This brings us to a consideration of the *age of onset* in the insanities. Rhein¹³ quotes Greding, who, in 1790, published a case of insane fury in an infant of nine months of age, while there have been several cases reported, in the eighteenth century, of depression and mania in children around eleven years of age. Rhein¹⁴ writes that "of forty-seven cases collected by Berkham there were ten cases under five years of age. Of thirty-nine cases collected from the literature by myself, including my own seven cases and exclusive of the infections psychoses, there were fourteen under ten years of age and twenty-five between ten and sixteen."

Dussik¹⁵ reports a case of a manic-depressive psychosis which became manifest in the eleventh year of life. He writes that "in the literature we find the report of phases in the case histories of older patients. On the other hand, isolated phases and usually milder diseases were observed in children. Thus Nitsche reported a boy, six years old, with the condition of depression. Siefert reported the case of a patient, ten years old, with a 'chronic mania.' Stansky reported on the progress of a psychosis in which ideas of suicide of a compulsory character manifested themselves at the age of seven years."

Dussik goes on to report on nine more such cases. Barrett¹⁶ reports on a series of one hundred cases of manic-depressive psychosis in which the first attack occurred before the twentieth year. There were five per cent who had an attack before the age of twelve. In other words, Barrett found that attacks occurred more frequently in earlier years than had been thought by others.

Kay¹⁷ writes that "statisticians estimate that four per cent of all children in school attendance will

become patients in mental hospitals sooner or later unless mental hygiene precautions are taken. How many countless more will become social misfits, unhappy neurotics, impractical cranks, and inefficient dreamers we cannot say or estimate with any degree of accuracy."

A recent comprehensive study of the age factor in schizophrenia of childhood was undertaken by E. Grebelskaja-Albatz¹⁸ who described twenty-two cases in children from three and one-half to eight years. These cases were observed from one-half a year to three and a half years. He found nine cases, which showed an acute onset, but a hereditary taint seemed to be lacking in this group. The patients described seemed to be normal up to the appearance of the psychosis.

In such a study, it is well to call attention to Kraepelin's¹⁹ belief, namely, that some cases of feeble-mindedness may be congenital dementia praecox. If such is true, many more cases would fall into this early age limit of psychoses. Kraepelin in a later study made a study of percentages of age distribution, which is as follows.

| | |
|-------------------|------------------|
| 3.5% at 10 years | 5.0% at 40 years |
| 2.7% at 15 years | 3.3% at 45 years |
| 21.7% at 20 years | 1.2% at 50 years |
| 22.8% at 30 years | 1.1% at 55 years |
| 13.0% at 35 years | 0.2% at 60 years |

Of the first admission in patients within the first two decades, over eight per cent were psychoneurotics, about five per cent were manic-depressives, and nearly twelve per cent were schizophrenics in each particular group. As to what number of cases, with their particular age percentages, remain uninstitutionalized, it is hard to state.

Sex Factor:—Bray²² points out that the relative incidence of males to females varies with different manifestations at different ages. This investigator finds eczema more common in males than females, migraine in females than males, whilst hay-fever is of equal occurrence; asthma is twice as common in boys as in girls, slightly more prevalent in females than males from the age of puberty to the menopause, after which it is slightly more frequent in males. Bray finds most allergic conditions more common in males than in females from birth to fifteen years of age, and in females than in males from the age of fifteen to forty-five years of age.

THE AGES OF FIRST ADMISSIONS²¹ FOR THE YEAR ENDING SEPTEMBER 30, 1935, IN THE ALABAMA INSANE HOSPITAL WERE—(REVISED FROM THE ORIGINAL):

| TYPE OF CASE | Under 15 yrs. | | 15 to 20 yrs. | | 20 to 25 yrs. | | 25 to 30 yrs. | | 30 to 35 yrs. | | 35 to 40 yrs. | | 40 to 45 yrs. | | 45 to 50 yrs. | | 50 to 60 yrs. | | 60 to 70 yrs. | | 70 to 80 yrs. | | Over 80 yrs. | | Total Cases |
|-----------------------------------|---------------|-----|---------------|------|---------------|------|---------------|------|---------------|------|---------------|------|---------------|------|---------------|------|---------------|------|---------------|------|---------------|-----|--------------|-----|-------------|
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| Involutional Psychoses..... | | | | | | | | | | | | | | | | | | | | | | | | | 16 |
| Psycho-neuroses..... | 1 | 1.6 | 4 | 6.6 | 3 | 3.3 | 15 | 24.6 | 14 | 23.6 | 10 | 16.4 | 6 | 9.9 | 5 | 8.2 | 2 | 3.2 | 1 | 1.6 | | | | | 61 |
| Manic Depressives..... | 2 | .9 | 10 | 4.8 | 24 | 11.8 | 21 | 10.4 | 15 | 7.5 | 20 | 9.8 | 26 | 12.8 | 30 | 14.9 | 33 | 16.3 | 16 | 7.9 | 5 | 2.9 | | | 202 |
| Schizophrenias..... | | | 16 | 11.8 | 37 | 27.4 | 39 | 30.1 | 20 | 14.8 | 5 | 3.9 | 14 | 9.4 | 4 | 2.6 | | | | | | | | | 135 |
| Paranoid and Paranoid states..... | | | | | | | | | | | 3 | 8.3 | 5 | 13.8 | 10 | 27.9 | 13 | 36 | 4 | 11.1 | | | 1 | 2.9 | 36 |

Of the psychoneuroses, Henry²³ states that these are more common in females, while in schizophrenic psychoses, the males are affected more frequently,²⁴ but women are somewhat more affected than men in paranoia and the paranoid psychoses and in manic-depressive psychoses.²⁵

Our statistics²⁶ show:

| | Males | Females |
|----------------------------------|-------|---------|
| Psychoneuroses | 17 | 44 |
| Manic-depressive psychoses | 88 | 114 |
| Schizophrenias | 104 | 67 |
| Paranoia and Paranoid conditions | 22 | 14 |

This seems to uphold the above statement.
Manner of Onset:—Allergic conditions may occur in an abrupt or gradual manner, according to Bray²⁷. Likewise, these two modes of onset are observed also in the psychoses, as is common knowledge.

Factor of Periodicity:—The periodicity of allergic conditions is pathognomic, according to Bray,²⁸ and they are intermittent or remittent in nature. This seems to be the case in respect to the abnormalities of the mind, as statistics in our hospital were as follows:

| | Re-admissions | Recovered | Improved | Unimproved |
|----------------------------------|---------------|-----------|----------|------------|
| Psychoneuroses | 8 | 3 | 55 | 12 |
| Manic-depressive Psychoses | 141 | 128 | 171 | 21 |
| Schizophrenia | 122 | 0 | 141 | 117 |
| Paranoia and Paranoid conditions | 8 | 0 | 17 | 7 |

Degree of Severity:—The allergies and the psychoneuroses, with the psychoses, if they persist for many years and are continuous, they tend to become continuous. They all seem to vary in duration, intensity, and length of free intervals.

Factor of State of Health:—Bray²⁹ states that many allergic conditions commence only when the appetite or digestion is upset, the bowels costive or irregular, or the urine scanty or frequent. He adds that menstruation, marriage and the menopause play an important part in females, as most allergic conditions are worse at the onset of the period. During pregnancy there is a comparative freedom from symptoms, and that allergic manifestations often disappear during fevers or exanthemata, and the

same effect is noted following operations, no matter of what nature, whether nose or abdomen, the effect being due, according to Bray, to the anesthetic and hospitalization rather than the nature of the tissues involved. Possibly suggestion also plays as important role in the improvement. It is well known that surgical procedures tend to improve temporarily patients who suffer from psychoneuroses. Perhaps the same mechanisms are at work in these two conditions.

Strecker and Ebaugh,³⁰ in their neuropsychiatric service, state that one-third of their patients are psychoneurotics. In almost fifty per cent of these cases, they found evidence of definite somatic disease. Of these entities, endocrine dysfunctions, tuberculosis, lues, extensive apical abscesses, organic heart disease, post-influenzal states, arteriosclerosis, anemia, heart and kidney diseases, osteo-arthritis, infected tonsils, sinusitis, extreme visceroptosis, chronic Neisserian infection, nephritis, chronic appendicitis, suppurative otitis media, prostatitis, ulcers of the gastro-intestinal tract, early gastric carcinoma, lead poisoning, and floating kidney were constantly repeated.

Of the affective psychoses, involutional melancholia is an example of the depressed type and occurs at middle age. As Henry³¹ calls attention to the etiology of this disorder in the involution of the sex function and an accompanying readjustment in the glands of internal secretion. This disorder is associated with menopausal changes in women, and in men the disorder occurs a few years later—about the ages of fifty or sixty. Paranoid cases show some personal weakness in health, in which alcoholic excess may be a contributing factor.

In schizophrenic reaction types, organic brain changes have been noted, as Cheney³² has pointed out. Perhaps the maturation of the sex function during adolescence has something to do with the development of this condition.

Concerning etiological factors in the development of the manic-depressive type of cases, Henry³³ calls attention to a reduction in the physical health by infection, a toxic agent or exhaustion so that the reserve forces of the body are depleted and latent psychotic tendencies may become active.

The Psychic Factor:—This leads us to the discussion of the role of the psyche in the production of allergic reactions. Berkart³⁴ states that all cases

of asthma have an "endogenous neuropathic basis" of an inherited nature, and that such affected individuals have a reduced resistance to all irritants and an increased tendency to reflexes. He labels asthmatic attacks as being attacks of anxiety neuroses, due to the fear of dyspnoea; thus patients with a neuropathic constitution may be affected by the stress and strain of life's circumstances, and thus produce an attack of dyspnoea. However, Bray insists that the allergic basis must be present first before psychic trauma can produce such a reaction.

There are many papers in the literature which support the several viewpoints of the problem. However, Francis³⁵ point of view is interesting in that he thinks that asthma is a symptom of vasomotor instability.

Bray³⁶ summarizes his point of view in the following paragraph. He writes, "it is obvious that mental and psychic states are capable of provoking allergic responses, but only in those persons who are already allergic. Many of the cases reported by psychologists concern women in middle life, in whom the first of a series of allergic reactions is stated to have been induced solely by worry or other mental upset. In reading through these histories very little attention seems to have been paid to the presence or absence of a positive family history of allergy, or whether the patient had suffered from eczema as a baby or some recurrent bronchitis that cleared up towards puberty, or whether the patient at the time of the reaction also suffered from migraine or some digestive disorder; in other words, essential evidence that would prove that the psychic trauma was merely the trigger that fired the already loaded allergic gun. Finally, the ability to obtain a positive Prausnitz-Küstner reaction with serum from these allergic patients is difficult to explain solely on a psychopathic basis; and it supports the view that I have expressed that nervous or psychic factors may promote allergic responses only in a person who is primarily allergic."

Multiplicity of Sensitivity and Passive Transfer:—This seems to be the rule in the allergies. Most persons are spontaneously hypersensitive to more than one allergen. Likewise, passive transfer has been reported after blood transfusion, and is employed also in the Prausnitz-Küstner reaction, where specific hypersensitiveness is transferred to the local

areas on normal people by serum from a hypersensitive person, according to Bray.³⁷

In the psychoneuroses, Myerson³⁸ finds that persons may vary from a psychosis to a psychoneurosis in a single hour. Furthermore, the manifestations of a psychoneurosis may vary at times. A person may show a manic tendency and then a phobia may become the dominant characteristic of the disease. We have noted this to occur in some cases from time to time.

Role of Intercurrent Disease:—Bray³⁹ states that allergic manifestations often disappear during fevers or exanthemata. The same effect is noted following operations. This is interesting in light of the recent work by Wortis⁴⁰ who produced hypoglycemic shock in schizophrenic patients with the use of insulin. Sixty-three per cent of the treated cases showed remissions. Although Wortis and his predecessor, Sakel, think that the effects may be due to the psychic effects of the shock so produced, it is our opinion that any agent, which is capable of jarring the bodily defenses, or stimulating them into action, may produce the same results. In other words, such agents as cold packs, foreign protein shock, or diathermy may operate by the above mechanism to bring clinical improvement in the allergies as well as in the case of schizophrenia. D'Elseaux and Solomon,⁴¹ in using carbon dioxide mixtures, speak of a "shock to the body economy" in producing a mental change by various procedures. Improvement sometimes is evident in the use of non-specific medication in the treatment of allergies. Furthermore, this jarring-process may be the method whereby Wassermann-fast cases are made to finally respond to specific therapy in otherwise resistant cases.

Role of the Sensitizing and Provocative Doses:—A sensitizing dose of allergen is not always necessary to produce a case of allergy, according to Bray.⁴² The provocative dose does not require a time interval, while in anaphylaxis these elements are necessary usually. First and repeated reactions can be elicited with identical infinitesimal quantities of the related allergen.

Off hand, one would be apt to state that such characteristics are not found in the psychoneuroses, but upon further examination one's opinion may be reversed. According to the concepts presented in our recent paper on psychoallergic mechanisms, we

have traced the probability of psychosomatic inter-reactions which may operate along the lines of the phenomena noted in the physical allergies. In other words, a person who is sensitized to earthquakes, in that he has experienced great emotional wear and tear in such a catastrophe, may readily show a marked emotional reaction when the specific subject of earthquakes is mentioned. Likewise, a person, who has recently been embarrassed by the fact that he did not pay his insurance premium, may blush and feel a "lump in his throat," if the subject of insurance happens to be mentioned in routine discussion. A person, who has not been so sensitized, will show no such reactions.

Such reactions seem to be allergic in nature, as they require no time limit in which to set up association neural pathways, as some observers would suggest. Furthermore, such reactions are distinctly specific in type. Consequently, a very small provocative dose of what we term psychoallergen is all that is needed to set off a marked emotional reaction in a previously sensitized individual.

Site of Reactions:—Bray states that allergic reactions take place mainly in the skin, respiratory, and gastro-intestinal systems. In other words, the nervous system, with its autonomic units, and the vasomotor system are some of the main structures which take part in such reactions which are observed in allergy.

The psychoneuroses do not differ so markedly in their mechanisms of production, as we find circulatory signs and symptoms⁴³⁻⁴⁴ which include:

1. Tachycardia
2. Bradycardia
3. Pulsus irregularis extrasystolicus
4. Vasomotor angina
5. Changes in the blood pressure
6. Peripheral hyperemias and anemias
7. Intermittent claudication
8. Acrocyanosis
9. Dyspragia intermittens intestinalis
10. Changes in conduction time (dromotropic disturbances).

Furthermore, the neuroses may exhibit the following respiratory signs and symptoms:

1. Laryngismus and laryngeal crises
2. Vasomotor coryza
3. Pulsus irregularis respiratorius

5. Oculocardiac reflex or Aschner's phenomena (arrest of respiration in expiration with slowing of the pulse).

Symptoms and signs of the cutaneous system may be:

1. "Goose flesh"
2. Hyperhidrosis
3. Bromidrosis
4. Pallor
5. Erythema
6. Dermographism
7. Urticaria
8. Angiospastic macules of palms and dorsum of hands.

Such phenomena are explained by an over-activity of the craniosacral innervations, which produce vagotonia. Sympathicotonia is produced by a lowering of the threshold on the part of the sympathetic system.

For further symptomatology of neurasthenia, see Davis' excellent article.⁴⁵ Read Hunt and Appel's⁴⁶ article on prognosis of schizophrenias for an excellent discussion of precipitating situations.

Eosinophilia:—Some observers claim that eosinophilia is present in many cases of allergy, so that the condition has been called the "disease of eosinophiles." However, some observers question this statement as they find only about fifty per cent of their cases may show eosinophilia in the particular allergic conditions. Do we find such an occurrence in cases of the psychoneuroses? We have reviewed some of the literature and have noted that this is certainly not common in occurrence. However, Ostmann⁴⁷ noted that sixty-two per cent of schizophrenics show eosinophilia. Sixty-nine per cent of imbeciles have this characteristic blood picture, and seventy-one of "Propf" schizophrenics have it. Ostmann comes to the conclusion that eosinophilia, in these cases, shows mental disorder.

The high percentage found in imbeciles is interesting, for it was Kraepelin who maintained that these cases were aborted cases of dementia praecox (schizophrenia).

Can the Laws of Allergy be Applied to the Psychoneuroses?—According to Jegorow,⁴⁸ the theory or allergy is comprised of the following laws:

1. *The Law of initial interval and repeated effect* maintains that a certain interval between stimulation, for instance the injection of serum, is neces-

sary for allergic changes to develop in organs and tissue. These will not occur unless the initial interval, to which a renewed stimulation succeeds, is past. In other words, the allergic state only follows the sensitizing dose, when an initial interval has past and thus allows the individual to develop a state of allergy.

When applied to the development of a state of psychoallergy, the same seems to be true, as such a condition does not tend to be produced unless the patient has previously received a sensitizing dose of psychoallergen.

2. *The law of change of speed in the course of the biologic processes* states that a process, for instance, a furunculosis, which, in the normal individual, takes several days to develop, may, in a sensitized person, develop in a few hours or minutes.

Psychic upsets, in sensitized individuals, occur rapidly, as was demonstrated by the cases which were cited previously. These were pointed out as being specific in nature and did not cause a reaction in a person who was not sensitized previously. In a sensitized patient, the reaction seemed to be instantaneous.

3. *The law of apparent discrepancy between cause and effect* calls attention to the small size and insignificance of the cause hardly warrants the violence of the reaction. In other words, the odor of primroses, in sensitized persons, causes a violent reaction, which would not be perceived hardly by a normal persons' sense of smell.

The law seems to operate in these cases of precipitated psychic conflicts brought about by the introduction of psychoallergens to which the patient has become sensitive. Such a marked psychic reaction is exemplified by the use of the so-called "lie detector" or psychogalvanometer, which records marked reactions in the terms of excessive skin currents in sensitized persons when specific psychic stimuli are introduced by way of such agents as word association tests. In normal persons, not having these complexes, no abnormal reactions are noted when the same experimental conditions are met.

4. *The law of cooperation of the mesenchyma and vegetative nervous system*, according to Jegorow, applies to the higher organisms which possess a mesenchyma and a vegetative nervous system. For, without a nervous system, there is no allergy.

Likewise, psychic disorders depend upon the co-operation of the mesenchyma and the vegetative nervous system, as we have shown previously. Vascular tissue, which is mesenchymal in origin, responds markedly to psychic stimuli, as has been shown by a great number of investigators. For a detailed discussion of the psychic stimulations of these systems, the reader is referred to Dunbar's monumental survey⁴⁹ of the literature on this large topic.

SUMMARY

By means of this comparative study, we have attempted to review modern concepts in the etiology of the clinical entities of allergy and the insanities, in an attempt to ascertain, to what extent, they were alike or different.

We have offered a brief introduction to the theory of psychoallergy, which is based upon the biologic approach to the interpretation of psychosomatic relationships. In doing so, we have discussed the laws of allergy and have attempted to explain how they apparently have counterparts in the psychoallergic realm.

We feel that past traumatic experiences, of psychic nature, act as psychoallergens and sensitize the autonomic nervous and vasomotor systems by apparently the same means as do the allergens in the production of allergic states.

CONCLUSIONS

1. The role of heredity appears to play a more dominant part in allergic conditions than it apparently does in the insanities, although this is not definite at the present time.

2. The factor of age of onset, in the allergies, shows a greater percentage of cases in the first decade than is the case in the insanities. However, the per cent of incidence in the later entity has not received the attention and study that it should. Consequently, this phase of the problem needs further work of an intensive nature before any definite facts can be stated.

3. The sex factor, in the allergies and in the insanities, seems to vary with each particular condition. However, it can be said that pubertal and menopausal changes evidently are affected by the factor of sex.

4. The allergies and mental diseases seem to have the same types of onset.

5. Likewise, the factor of periodicity seems to be the same in the two classes of disease.

6. The degree of severity seems to determine the prognosis in both allergic and psychopathologic conditions.

7. The state of health plays an important part in both entities. If the patient's resistance is low, the liability to either disease entity seems more possible.

8. The psychic factor seems to play an important role in both types of disease.

9. The multiplicity of sensitivity seems to be a property which is inherent in both conditions.

10. Intercurrent disease may cause improvement in the allergies and also in the insanities.

11. Sensitizing and provocative doses may or may not produce allergies or psychopathologic conditions.

12. The sites of reaction in the allergies and the psychoneuroses are practically identical. Furthermore, they seem to depend upon the same *modus operandi*.

13. Eosinophilia may or may not be present in the allergies. This blood phenomenon has been observed also in some of the insanities.

14. The laws of allergy, as set forth by Jegorow, apparently have exact counterparts in various psychopathologic conditions.

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ULCERS OF THE ANO-RECTAL REGION.*

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Ulcers are among the less common of the pathological conditions which afflict the ano-rectal region. Even in well attended rectal clinics in large cities, where most of the patients come from the poorer classes, it is only occasionally that the attending physician encounters them.

If there should be an interference with the normal circulation, either because of trauma, constitutional or local diseases, then the natural resistance of the tissue becomes weakened and impaired, bac-

teria invade the field, disintegration and destruction occur and the result is *ulceration*.

Ulcers are more common in females than in males. Various vaginal discharges, rectal intercourse and other unnatural manifestations are perhaps the main factors which make woman more the victim of those afflictions than man.

CLASSIFICATION

Ulcers are classified according to (a) their location, and (b) to conditions which are responsible for their formation.

*From the Rectal Clinic of the Beth Israel Hospital.

According to their location, we have *rectal, recto-anal, anal, ano-perineal* and *perineal* ulcers.

According to conditions which cause them, we encounter *traumatic, chancroidal, syphilitic, tuberculous* and *dysenteric* ulcers. There is also a group of unusual ulcerations caused by constitutional diseases in their terminal stages. These are hepatic (cirrhosis of the liver), nephritic, diabetic, marasmic, leukemic, etc. Certain drugs when used in and about the ano-rectal region may cause ulceration. Rodent ulcer, though it is in reality an ulcerated epithelioma of the skin, is included in the general classification of ulcers.

SYMPTOMS

The most pronounced symptom, of course, is pain, which varies in character and duration with the location and the cause of the ulcer. Thus, if the ulcer is confined to the rectal wall the pain is dull and continuous. It becomes sharper during a bowel movement, especially if the feces are hard, and subsides soon afterwards, to again become dull. If the ulcer is situated in the anal canal and involves the sphincters, an area which is abundantly supplied with nerve filaments, the pain is sharp, occurs mostly during the time of defecation and lasts afterwards for quite a while, similar to a fissure *in ano*. If the lesion is situated more externally, then actual pain is practically eliminated. The patient complains only of being uncomfortable.

If the ulcer is caused by trauma, the pain is sharper than is the case when it is due to any of the systemic conditions. This is because a traumatic ulcer is acute, the full depth of the tissue involved is still intact, the nerve filaments are exposed in the wound, and pain is therefore produced by mere proximity of the rectal walls or by pressure, whether from within, as during defecation, or without, as when sitting. In a ulcer which is formed from a broken down gumma, tuberculosis or similar chronic condition, the full depth of the tissue is involved; the same destructive process which attacks the muscular tissue affects simultaneously also the nerves in that area, and thus the pain is dull in character.

Other symptoms are *diarrhea*—though constipation may be the rule because of the fear the patient has of a bowel movement,—*tenesmus* and *discharge*. This latter symptom varies in character and in amount in the different forms of ulcer; it is scanty,

mucoïd or muco-sanguinous in the non-specific ones. In the specific ones it is copious, caseous, sanguino-purulent or purulent, with a very offensive odor. The patient also complains of being tired and irritable.

If the ulcer is situated in the upper rectum, the patient will experience pain radiating to the lumbar region.

DIFFERENTIAL DIAGNOSIS

The literature on this subject is very meagre—probably because ulcers are not common and limited clinical experience handicaps correct diagnosis and treatment.

The following points will aid the diagnosis:

A traumatic ulcer usually occurs singly, is round in contour and small in size. Its edges are slightly everted and swollen. It is not very deep. The floor is covered with a thin layer which bleeds easily.

Chancroidal ulcer seldom occurs above the mucocutaneous junction, is usually single, but may be multiple; its edges are markedly swollen, but without induration of the base. It has a copious discharge that has a very offensive odor.

A tuberculous ulcer is usually conical in shape. Its edges are reddened, thickened, slightly raised, over-hanging, and often undermined a distance of a few millimeters. The undermining may be quite extensive, particularly when two or more ulcerations coalesce which is often the case in this type of ulcer. The base appears pale red after the yellow pyogenic membrane, which is only slightly adherent, is swabbed away. Its size varies from a few millimeters to several centimeters. The granulations bleed readily, but, when dry, they appear nodular or pebbled.

Syphilitic ulcer results from degenerating chancres, papular skin eruptions, condylomatas and broken down gummas. The ulcer is large, the result of coalescence of several small ones; it is irregular in shape, with sharp-cut edges and little undermining. On close examination it is surrounded by nodules of a bluish color. The discharge is profuse and tenacious.

Dysenteric ulcers are most numerous in the sigmoid flexure and rectum. They are large and stellate. When they become chronic, they are very destructive.

Other forms of ulcers have no special character-

istics and we shall pass them by without further comment.

It is needless to say that in each case a carefully taken detailed history is of the utmost importance. It must be remembered that statements from some patients must be cautiously received, due either to their ignorance or to the fact that they are desirous of concealing the truth.

Another important procedure is complete bacteriological and serological examinations in order to determine the nature of the ulcer, and one should not come to any definite conclusion as to the diagnosis until such examinations have been carried out.

TREATMENT

The treatment of ulcers of the rectum, anus and perineum can be tabulated under the following headings:

- (a) *Hygienic.*
- (b) *Medicinal.*
- (c) *Specific.*
- (d) *Surgical.*

Hygienic treatment is accomplished by sitz-baths from five to ten minutes twice a day. The patient is to be directed to use the sitting and not the recumbent posture and to separate the buttocks so that the water may enter the anal canal.

Saline enemas for the rectum and anus and a basin for the perineum will do, if sitz-baths are not available. For the enemas the recumbent position should be used.

Medicinal—Of all the drugs used ichthyol seems to be the best. It is used either in the crude form or in an ointment preparation. For the anus and rectum the tube with an attached nozzle is the proper one to use; for the external ulcerations no specific applicator is required. There are many salves and preparations on the market which may be used advantageously.

Specific treatment is used for specific ulcers. This does not mean to say that anti-luetic therapy, rest, sunshine and good food, or anti-gonorrheal treatment will by themselves heal the respective lesions. The ulcer *per se* has to be treated as such, but these measures certainly help a great deal in hastening perfect results. One without the other will always fail.

Surgical treatment is indicated, in fact imperative, in ulcers about the anus which give symptoms

similar to fissure *in ano*; also for ulcers which have a fistulous opening. It must be remembered that the latter is quite common as a rule and should not be over-looked. No other treatment should even be attempted. Excision with drainage cures them. For rodent ulcer free excision of the ulcerated area is the treatment.

In conclusion, I wish to say a word about the cauterization and fulguration treatment. Some physicians use an electric or Paquelin cautery more often than is necessary in the treatment of ano-rectal ulcers. They over-look the important fact that burning in most cases does more harm than good. It adds greatly to the patient's suffering, causes sphincteric spasm, which we must avoid, and delays healing by enlarging and deepening sloughing and denuded areas.

One is occasionally justified in destroying unhealthy granulations and over-hanging edges of mucosa or skin to facilitate drainage and hasten a cure; then high frequency fulguration is preferable to the actual cautery or some form of caustics because it is less painful and does not produce cicatricial tissue.

SUMMARY

Ano-rectal ulcers are not of common occurrence and because of this fact the attending physician should take great pains in making the diagnosis. He should never rely upon a visual examination alone. To examine the patient's blood, the sputum or the discharge, according to indication, should be the routine. Treatment should be applied according to the nature of the ulcer.

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485 Commonwealth Avenue.

PREMATURE TWINS—IDENTICAL.*

V. E. LASCARA, M. D.,
Norfolk, Virginia.

This case presented much interest from the onset. The mother, a primipara, was under the care of a mid-wife who was to deliver her at home on the expected date of confinement.

Pregnancy did not proceed in a normal way, however. In the seventh month premature labor set in, initiated by a sudden motion of the fetal parts. The mid-wife, not liking the condition of affairs, dismissed herself from the case. Immediately a physician was called in. He in turn referred the patient to our Ward Service.

History as obtained from patient revealed a sudden onset of labor like pains following a sudden motion *in utero*. These pains started twenty hours before admission but became quite active approximately six hours before admission to the hospital. The patient stated that the "bag of waters" burst before admission. There was slight "bloody show." Pains occurred at five-minute intervals and were of moderate intensity.

Date of admission was January 27, 1937. Her expected confinement was calculated for April 9th. Last menstrual period had its onset on July 2, 1936.

Physical Examination: This showed the heart, lungs, and blood pressure to be within normal limits. There was no peripheral edema.

Abdominal Examination: The size of the abdomen was enlarged to about the size of a seven months' pregnancy, the height of the fundus uteri being 27 cm. from summit of symphysis pubis. Leopold's maneuvers revealed the position to be right occipital anterior with audible fetal heart rate in right lower quadrant, Vertex engaged. The uterine contractions were of moderate intensity. Pains occurred at three minute intervals.

Rectal Examination: The cervix was only partly effaced; membranes not palpated. Vertex was above the spines.

Approximately one hour after admission pains became more intense and the latter part of the second stage of labor was evident. Patient was ordered to

the delivery room, but little did I dream about what awaited me in this case.

Patient was prepared for delivery. After several strong pains she gave birth to a much under-developed infant. I expected a premature infant but not as small as this one which was not more than fifteen inches long. After a few seconds of stimulation child began to breathe. Cord was tied and child was immediately ordered to be placed in an incubator without delay. Now I was ready to deliver the placenta but to my astonishment my eyes became fixed on a foot presenting at the vulva. My only thought was we had another newborn on the way into the world. I immediately proceeded to deliver this infant by means of extraction with manual rotation. It was so small that I handled it like glass that was easily breakable, but I finally brought it into the world. Cyanosis was quite noticeable. Cardiac sounds were weak but audible, so I set in to attempt to get this child (smaller than the first) to breathe. All known methods were tried; finally, alcohol sponge to thorax was tried; respiration began; cord was tied; and infant was rushed down to an incubator.

The incubators were not of elaborate construction with modern facilities. They were made of ordinary pine wood with enough opening for the infant's head to lie outside of it. The top contained two sockets for ordinary electric bulbs. The base was an ordinary bassinet. The internal temperature was between 90 and 100° F.

These twins were of female sex (identical—only one placenta). Their birth weights were 2 lbs. 14 ounces and 2 lbs. 9 ounces, respectively.

Both infants were clothed with a robe, which was made by loosely quilting several layers of cotton between gauze. The usual care of the newborn was not done. It was my main purpose to get them warm and keep them so with the least handling. The instillation of 1 per cent silver nitrate in their eyes was done after they were settled in their new surroundings. I had the nurses watch them with careful eyes.

*This case is reported by Dr. Lascara from his Ward Service while he was Resident at St. Francis Hospital, Wilmington, Del.

Their first feeding was given them six hours after birth. It consisted of half a dram of sterile water, given by means of a medicine dropper. Twelve hours after birth I started them on one dram of 1 per cent Lactogen; this was to be repeated every two hours. Except for short periods of cyanosis the first day was uneventful.

On the second day one dram of Similac was given every two hours. The dilution was one measure of Similac to two ounces of water. This day was marked by quite frequent periods of cyanosis, for which I ordered one drop of Coramine—to be given in a few drops of water. This medication proved successful.

On the third day they were getting two drams every two hours. By the fifth day they were on three drams with the interval every two hours. Each day each feeding was increased a dram until by the end of two and a half weeks they were taking one ounce of Similac every three hours. At this time they received one drop of Viosterol, increased a drop daily thereafter until a maximum of fifteen drops was reached. I also started them on three drops of brandy daily and eight drops of orange juice.

When one month old they were taking two ounces of Similac every three hours. I had them feeding from small one ounce bottles with specially adapted nipples. It was a real treat to see how they fed from these bottles after they had become accustomed to the medicine dropper. Orange juice was gradually increased two drops daily to reach a maximum of one-half ounce.

The amount of feeding was gradually raised to four ounces every three hours. Three times a day they received one ounce of Dextri Maltose as a complimentary feeding. Three drops of Syrup of Ferrous Iodide was given daily to ward off any possible anemia.

When they were three months old they were removed from the incubators. Maturity was marked at this time. They compared with any of the full-term infants. Their weights at this time was 6 lbs. 12 ounces, and 6 lbs. 8 ounces, respectively.

Physical check up showed no evidence of heart or lung abnormality, and except for a slight umbilical herniation in the smaller infant, there were no other physical deformities.

I discharged them when they were $3\frac{1}{2}$ months of age. Their weights then were 7 lbs. 12 ounces, and 8 lbs.

These twins have been checked weekly with no evidence of physical or feeding complications. They showed gain weekly. Their last weights—recorded two days before my writing this paper—were 10 lbs. 3 ounces, and 10 lbs. and $\frac{1}{2}$ ounce.

This case of premature twins is reported because of the rarity, especially when development was below par, and mainly because of the manner in which they matured with odds much against them from their first breath.

In conclusion, I am indebted for the success in this case to kind vigilance and untiring care given them by our maternity supervisor and the nurses.

WEIGHT DEVELOPMENT

| | <i>Baby A</i> | <i>Baby B</i> |
|---------------|----------------------------|---------------------------|
| 1-27-37 ----- | 2 lbs. 14 oz. | 2 lbs. 9 oz. |
| 3- 1-37 ----- | 3 lbs. $1\frac{1}{2}$ oz. | 2 lbs. 11 oz. |
| 3- 6-37 ----- | 3 lbs. $1\frac{1}{2}$ oz. | $3\frac{1}{2}$ lbs. |
| 3-11-37 ----- | 3 lbs. 8 oz. | $3\frac{1}{2}$ lbs. |
| 3-16-37 ----- | 4 lbs. 6 oz. | 3 lbs. 10 oz. |
| 3-22-37 ----- | 4 lbs. 6 oz. | 4 lbs. 3 oz. |
| 3-25-37 ----- | 4 lbs. 15 oz. | 4 lbs. $6\frac{1}{2}$ oz. |
| 4- 7-37 ----- | 5 lbs. 6 oz. | 5 lbs. 1 oz. |
| 4-13-37 ----- | 5 lbs. 12 oz. | 5 lbs. 3 oz. |
| 4-19-37 ----- | 6 lbs. 3 oz. | 5 lbs. 12 oz. |
| 4-27-37 ----- | 6 lbs. $11\frac{1}{2}$ oz. | 6 lbs. 8 oz. |
| 5- 6-37 ----- | 7 lbs. $7\frac{1}{2}$ oz. | 7 lbs. $2\frac{3}{4}$ oz. |
| 5- 9-37 ----- | 8 lbs. 1 oz. | 7 lbs. 12 oz. |

Newport at 35th Street.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. JAMES B. STONE, 15 Maxwell Road, Richmond.

President-Elect—MRS. HAWES CAMPBELL, Venter.

Corresponding Secretary—MRS. LAWRENCE O. SNEAD, 5307 New Kent Road, Richmond.

Recording Secretary—MRS. JAMES K. HALL, 3011 Seminary Avenue, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, 2502 Hawthorne Avenue, Richmond.

Chairman of Publicity—MRS. FRED J. WAMPLER, 4103 Forest Hill Avenue, Richmond.

Norfolk Auxiliary.

The Woman's Auxiliary to the Norfolk County Medical Society, at a meeting January 12 at the

Ghent Hotel, decided the bed, in the recently completed Tidewater Victory Memorial Hospital for the tubercular, shall be a memorial to its late member, Mrs. Nealie Silvester McDowell. This bed had been donated to the hospital by the auxiliary. Mrs. W. P. McDowell was an active member of the auxiliary for many years in the local, state and national auxiliaries. She served as president of the Norfolk Auxiliary and was elected president of the Woman's Auxiliary to the Medical Society of Virginia but was unable to serve on account of illness.

At this meeting the auxiliary decided to furnish books, playing cards and games to the community centers. This was done in response to an account of the needs of such articles given by Mrs. Robert Whitehead of the W. P. A. Recreational and Service Centers. A report was given of the auxiliary's service work at the Christmas season. The work included decorating trees in the hospitals, furnishing magazines to the patients and, among other things, a radio to one of the recreational centers.

The auxiliary furnishes layettes to the King's Daughters Clinic for infants of patients who need this particular help. There are four complete layettes given each year and these are made by the members of the auxiliary. Three layettes were reported completed and donated.

Mrs. Harry Myers was unanimously elected an honorary member of the auxiliary at this meeting.

At the conclusion of the meeting, luncheon was served, during which time Miss Carol Simpson entertained with a group of tone poems.

Mrs. C. J. Devine, president, presided.

(MRS. W. E.) RUBY D. BUTLER,
Chairman, Press and Publicity.

Williamsburg-James City Auxiliary.

The Williamsburg-James City County Auxiliary met at the home of Mrs. L. V. Henderson, January 13, 1938, with nine members and one visitor present.

After the business session, a very enjoyable social hour followed, with refreshments served by the hostess.

The March meeting will be held at the home of Mrs. E. T. Terrell.

(MRS. L. V.) MABEL HENDERSON,
Chairman, Press and Publicity.

Mid-Tidewater Auxiliary.

The January meeting of the Woman's Auxiliary to the Mid-Tidewater Medical Society met Tuesday, January 25, in the home of Mrs. W. S. Cox, of West Point, Va. After the business meeting, a program was given.

First on the program was a greeting message from the National President, presented by our president, Mrs. A. W. Lewis. Theme for the day was syphilis. In the absence of Mrs. J. B. Stone, of Richmond, the guest speaker, Mrs. Hawes Campbell presented her paper. Mrs. Stone was most complimentary to our auxiliary and its work. The group was disappointed and regretted that Mrs. Stone could not be present on account of illness.

The following papers were then presented:

| | |
|--|---------------------------|
| The Next Great Plague to Go | Mrs. Paul Pearson |
| One out of Every Eight Persons in City of Richmond | Mrs. James Smith |
| Has Syphilis | Mrs. James Smith |
| Venereal Disease Talks Arranged for Students, | Mrs. Malcolm Harris |
| Prudery Is No Cure | Mrs. W. S. Cox |
| State Mortality Rate Higher | Mrs. A. W. Lewis |

Upon conclusion of the program, we adjourned to the York Inn where the West Point doctors and their wives were hosts at a delicious sea food dinner.

(MRS. PAUL) VIRGINIA PEARSON,
Chairman, Press and Publicity.

A. M. A. Radio Program for March.

March 2—WATER, WASTE AND SANITATION

Importance of community control of water supplies, sewage disposal and general sanitary matters.

March 9—PROTECTING PERISHABLE FOODS

What the community can and must do to protect fresh foods such as fish, fruits, vegetables, meats, bakery goods.

March 16—KEEPING BOOKS ON HEALTH

The meaning and importance of vital statistics, contagious disease reporting and community health records.

March 23—CATCHING DISEASE FROM ANIMALS

Rabbit fever, rabies, undulant fever and similar infections, and what can be done about them.

These programs come in over NBC Red Network, on dates given, at 2:00 P. M., Eastern Standard Time.

Proceedings of the Council of the Medical Society of Virginia

Dr. G. F. Simpson, President, presided at the meeting of the Council of the Medical Society of Virginia, held at the Society's headquarters in Richmond, on February 2, 1938. In addition to Dr. Simpson, the following were present: Dr. A. F. Robertson, Jr., president-elect; Dr. F. O. Plunkett, vice-president; Drs. Julian L. Rawls, Roshier W. Miller, C. E. Martin, W. C. Akers, John Hundley, Jr., C. O. Dearmont, and J. E. Knight, councilors from the second to the eighth Congressional districts, inclusive; Dr. I. C. Riggin, State Health Commissioner; and Miss Agnes Edwards, secretary.

It was moved to dispense with the reading of the minutes of the Roanoke meeting of the Council and they were approved as published in the December, 1937, issue of the MONTHLY.

Dr. A. I. Dodson, President of the Richmond Academy of Medicine, was given the privilege of the floor, and said his organization would like very much to have the Council discuss the relation of membership between the local, state and national organizations, and, if this body saw fit, have the By-Laws of the State Society amended so as to make for better cooperation and thus strengthen all of the organizations. Dr. Simpson thanked Dr. Dodson and asked the pleasure of the Council in regard to this matter. It was decided that it should be discussed under new business.

The only matter from the last Council meeting to have attention at this time was a question presented by Dr. Dearmont, as to whether or not it would be advisable for doctors to be given a siren or some other means of identification to facilitate their going to highway accidents. Dr. Dearmont stated that he had not gotten in touch with the members of his committee but asked the opinion of those present. In the discussion which followed, Drs. Rawls and Miller stated that they did not believe that either Norfolk or Richmond would approve the use of sirens by doctors in the cities as these are limited to the fire and police departments and it was felt this was a matter which would have to be determined more or less locally. Upon motion, the final decision in this subject was left to the Council at its meeting in the Fall.

Upon request of Dr. F. D. Wilson, chairman, Dr. Rawls said the Child Welfare Committee would like to know if they may appear before the Budget Committee of the State Legislature as representing the Medical Society of Virginia in their endorsement of certain recommendations for various agencies which have to do with child care in this State. It was at first felt that they should do this as individuals rather than as representing the Society as the Council was not at this time familiar with

the recommendations. Upon request, however, Dr. W. B. McIlwaine appeared before the Council for the Child Welfare Committee and stated that the recommendations referred to are the amounts specified by the Committee at the Norfolk meeting in 1935 and approved by the House of Delegates at that time. (Figures are given on page 526, December, 1935, issue of the VIRGINIA MEDICAL MONTHLY.) Following his explanation, motion was adopted that this Committee should have the right to do as they feel is for the best, so far as the recommendations correspond with what the Medical Society of Virginia has approved.

Next to be considered was the selection of dates for the Danville meeting of the Society. These were named as October 4, 5, and 6, 1938.

A statement as to the finances of the Society was next given by the executive secretary-treasurer, who asked what should be done with the money now in savings, as the banks give a rate of $1\frac{1}{2}$ per cent on the first \$2,500 but only half of one per cent on all in excess of that amount. Motion was made and adopted that the reserve funds of the Society should be split up and placed in two or more banks with a Federal guarantee, this to be determined in conference with the Budget Committee of the Council. Dr. Simpson stated that in this connection he wished to appoint Dr. R. W. Miller and Dr. C. E. Martin as the Budget Committee.

Under reports of committees, the first matter to be presented was the reading of titles of bills which had been presented in the General Assembly, which might have a bearing on medical affairs. These had been sent by the Bureau of Legal Medicine of the American Medical Association for the information of the Society. One to receive special attention was the request for certain appropriations for tuberculosis work, a pamphlet about which had been sent the Councilors by members of the Virginia Tuberculosis Association. After a free discussion of this question, a motion was offered by Dr. Rawls that "The Council goes on record as favoring the appropriation of all the money that the State Legislature can possibly afford in the fight on tuberculosis, provided it is spent at the discretion and under the authority of the State Health Department." This was duly seconded and adopted and the secretary was instructed to transmit this to the Legislative Committee at once.

A request from the Committee on Syphilis Control was approved that copies of the resolution with regard to syphilis control, adopted at the 1937 meeting of the Society (published on page 526 of the December, 1937, issue of the MONTHLY) be sent to several State officials.

Dr. J. M. Hutcheson, chairman, sent a statement from

the Department of Clinical and Medical Education to the effect that they had decided to contact the local medical societies in the State to see what their desires are concerning additional courses and the Department will try to put on such, as far as their resources permit.

Dr. W. D. Kendig, chairman of the Ethics Committee, wrote that they had answered an inquiry as to the standing of a member. They had no matter, however, to bring to the attention of the Council.

Dr. W. L. Peple, reporting for the Committee to Confer with the State Board of Nurses Examiners, said that upon the request of the president of the Nurses Board, Drs. Trout and Johns had been assigned to attend a meeting held in December. Dr. Trout was unable to attend but Dr. Johns reported that the meeting was mostly concerned with the question of the training schools at the tuberculosis hospitals in Virginia, as changes in the curricula of these institutions had been proposed. He felt that such meetings with the Board of Nurses were quite beneficial as the interchange of thought promoted a better understanding.

Reports from these three chairmen were ordered received and filed.

Dr. Walter B. Martin, chairman of the Committee on Medical Economics, had sent the following statement to be submitted to the Council:

DEAR DOCTOR SIMPSON:

I request that you submit the following matter to the Council at its February meeting for its action:

Your Committee on Medical Economics held a meeting in Richmond on Tuesday, January 4, with Mr. H. H. Gordon, Director of Rural Rehabilitation, and Dr. R. C. Williams, Medical Director of the Federal Farm Security Administration. The purpose of this meeting was to work out some plan for the medical care of the families enrolled under the F.S.A. While its clients are scattered throughout the State, it is now proposed to start the plan in only four counties with the idea of later extending it to other counties.

The clients of the F.S.A. are citizens of the State living in rural areas who have been approved by a committee of five leading citizens in each county. They are families who for various reasons have exhausted all of their financial resources but who by virtue of personal stability are considered capable of rehabilitation, and whose land is considered sufficient in amount and productivity to eventually provide them with a secure living. Through the F.S.A. these families are loaned a small amount to meet their constructive needs and are given the benefit of the advice and direction of a trained agriculturist.

It is proposed that each family include in its budget a properly proportioned amount for medical care to be put in the hands of a trustee and to be paid to the physician rendering medical service in each instance. The details of the arrangement will be a matter of agreement between the agent of the F.S.A. and the county medical society. A copy of such a proposed agreement is enclosed.

Your Committee after considering these proposals and after full discussion has given its approval and endorse-

ment to the plan. We therefore submit this proposal to the Council with the request that they approve it and that notice of their approval be sent to the Farm Security Administration and to each component society in the State.

Sincerely yours,

WALTER B. MARTIN, *Chairman.*

January 22, 1938.

DRAFT OF PROPOSED UNDERSTANDING BETWEEN THE VIRGINIA STATE MEDICAL SOCIETY AND THE FARM SECURITY ADMINISTRATION

Data submitted by representatives of the Farm Security Administration reveals that approximately 6,500 families residing in the rural communities of Virginia are clients of the Farm Security Administration. Loans ranging from \$150.00 to \$700.00 per annum, the average being about \$300.00 per annum, are made by the Farm Security Administration to assist such clients in paying for necessities and rehabilitating their farms and families so that they can eventually become self-sustaining. As soon as these families become self-sustaining or can obtain loans from private sources, they are removed from the Farm Security Administration lists. To be eligible a client must have derived the major portion of his income within the past year from farming, and he must be unable to secure credit from any other source. In formulating the rehabilitation budget of clients which serves as a basis for loans, the Farm Security Administration may set up an amount to be used for medical care for the family during the year. The net amount of cash these families may have all for spending over and above subsistence and cropping requirements varies from \$10.00 to \$150.00 per annum, the average being about \$50.00 per family for a year.

Representatives of the Farm Security Administration requested the cooperation and assistance of the Virginia State Medical Society and its component societies in developing a program to provide medical care for these low income farm families in Virginia, which program would assure these families of the services of a competent physician when required at such fees as the families are able to pay, and which would assure attending physicians some compensation for their services.

The Virginia State Medical Society will cooperate with and assist the Farm Security Administration in an effort to make available to these low income farm families reasonably adequate medical service, and recommends to its component societies that they do likewise, provided the principles and procedures outlined are adhered to by the Farm Security Administration.

Provision 1. That the Farm Security Administration loan to its clients participating in the proposed medical association for medical care a specified sum of money. This sum will vary, ranging from \$10.00 to \$50.00 per family per annum. The exact amount for a given family will depend upon the estimated income of the farmer and his ability to pay, and the amount of medical services which probably will be

needed, the exact amount in each case to be determined by conference between the Doctor of Medicine and the farmer, using as a basis the economic condition of the farmer as shown by the farm and home plan worked out by the Farm Security Administration.

Provision 2. The funds loaned to families for medical care will be placed in the hands of a trustee in each county or administrative district. Such trustee will pay for medical services rendered by a physician within the limitations fixed by this understanding.

Provision 3. This understanding will be presented to the membership of each local medical society. Those Doctors of Medicine who are willing to render services to these clients under the terms of this agreement will volunteer to do so, and the officers of the local medical society will furnish their names to the local supervisor of the Farm Security Administration. The local supervisor in turn will supply a list of such Doctors of Medicine to the clients in the county or district concerned.

Each client is to be advised that he has the liberty of choosing the physician he will call for medical services.

The client will be advised to call the physician of his choice from the list compiled. The physician will render such services as in his opinion are necessary. At the end of each month the Doctor will furnish the local supervisor an itemized statement of the services and the charge for each item.

The schedule of charges for services to these clients shall be on the basis of the usual charge for similar services rendered persons of moderate means in the same community.

In the event a question is raised by a local supervisor, the trustee or a client, concerning the statement rendered by any physician it shall be referred to a committee appointed by the president of the local medical society. The committee shall ascertain the facts concerning the services rendered and charges made. If the recommendation of the committee is not satisfactory, the physician or client may appeal to the Medical Economics Committee of the Virginia State Medical Society or to a committee designated by the Council of the Virginia State Medical Society.

Provision 4. It is understood that the medical services provided by this agreement shall embrace such services as would be performed by a family physician in the home of the client or in the office of the physician, including obstetrics and ordinary drugs usually dispensed by a physician. It is not intended that this plan shall cover hospitalization or major surgical procedures.

In the event that clients make excessive demands on physicians for unnecessary services, such fact shall be reported to the local supervisor who will consider this fact in judging the client's eligibility for further benefits of any character from the Farm Security Administration.

Provision 5. The local medical society may direct the trustee to pool and set aside a designated sum for hos-

pitalization or surgical emergencies of the families participating in this program in a given area.

It is understood that the Virginia State Medical Society and its officers do not assume the power of making binding agreements with any agency concerning the matter of fees for medical services rendered by any physicians in the State. It is our belief, however, that the entire medical profession concerned would enter whole-heartedly into this cooperative effort in the hope that these families may be rehabilitated and become financially self-sustaining citizens of their respective communities, requiring no aid from any source.

It is our opinion that the principles involved in the above plan do no violence whatever to any principle or code of ethics. It is therefore recommended for adoption by each and every component society in the State.

It was moved that this report be received and filed. The Councilors stated there was nothing special to report from their respective districts.

In response to inquiry from the secretary, it was decided that the minutes of this meeting of the Council should be published in the March issue on the MONTHLY.

Letters were presented from the Arlington County Medical Society, the Medical Society of the District of Columbia, and the Bureau of Legal Medicine and Legislation of the American Medical Association, with regard to the organization of the Group Health Association, Incorporated, by the Home Owners' Loan Corporation in Washington. As it was felt the Society should assist the doctors of the District in their fight against this organization, which would also provide medical care and hospitalization for a number of employees residing in Arlington and Fairfax Counties, it was moved that this correspondence be referred to the Medical Economics Committee, with power to act. Adopted.

Attention was called to the editorial in the January 15th issue of the *Journal of the American Medical Association*, captioned "Medical Care for All the People"; to a letter from Dr. John P. Peters, secretary of the Committee of Physicians for the Presentation of Certain Principles and Proposals for the Improvement of Medical Care; to resolutions from the Caduceus Club of Pawtucket, R. I., in answer to the Principles and Proposals of the Committee of Physicians; and to the resolutions and statement of Four Principles of the Medical Society of the County of Westchester, New York, with regard to good medical care. It was ordered that all of these letters and resolutions be referred to the Medical Economics Committee for their information and the secretary was instructed to send to that committee any other information which may be received along this line.

The secretary said that the Medical Economics Committee had been allowed only \$10.00 in the budget for the furtherance of its work and that a good part of this had already been expended in securing information from local and other organizations. Dr. R. W. Miller moved that an additional \$60.00 be allowed this committee for such

expenses as they may deem necessary. This was seconded and carried.

The President told of several matters which had come to his attention, including correspondence from Drs. J. W. Preston and H. U. Stephenson of the State Board of Medical Examiners, regarding a matter which might have a bearing on the Medical Practice Act. It was felt that they were handling the matter satisfactorily and doing all that was necessary at this time.

The question presented by Dr. Dodson at the beginning of the meeting as to membership was next discussed. Dr. Rawls said that he had been on Dr. Bowyer's committee which studied this subject last year and they had decided at that time not to enter into a discussion of the relationship of membership in the local, State and American Medical associations, feeling then that a member might be allowed to retain his membership in the State Society unless he was dropped from his local society because of misbehavior. Motion was adopted that this matter of membership be referred to the same committee as last year—Dr. C. B. Bowyer, chairman, and Drs. Rawls and Knight—that they may clarify the situation and report at the next meeting of the Council.

There followed a short informal discussion of subjects of medical interest until adjournment about 5:15 P. M.

AGNES V. EDWARDS, *Secretary*.

Correspondence

Virginia Academy of Science. Section on Medical Sciences.

TO THE EDITOR:

May I call the attention of the medical profession of Virginia to the Section on Medical Sciences of the Virginia Academy of Science?

This Section is open to the medical, dental and veterinary professions in Virginia. Papers are read on the more scientific aspects of medicine, and valuable contributions are given, chiefly by laboratory workers in the institutions and colleges in Virginia. However, it is the earnest purpose of this Section to attract the attention of the members of these three professions to whom the scientific features of the art and science of healing particularly appeal.

Any unusual observation that is made at the bedside of a patient is certainly just as valuable as an observation made upon a guinea pig. The fact that many of the fundamental discoveries in the progress of medicine have been made by practicing physicians, as Sir James MacKenzie, or by those who have not even graduated in medicine, as Pasteur, should be a stimulus to every doctor to add some original observation. A more accurate description

of pain, for instance, in various diseases; a report of neoplasms that have an interesting embryologic origin, as ectopic tissues and cysts and fistulas of the neck; affections of Meckel's diverticulum and the different kinds of this anomaly; unusual cases of hermaphroditism; the very earliest symptoms of any of the acute infectious diseases; the determination of the period of conception in human beings; the relationship of certain foods and waters to dental decay; the varying symptoms of appendicitis depending upon the location of the appendix; the course of the rarer infectious diseases in the lower animals; and the incipency of certain mental diseases, are just a few of the many instances in which accurate observation may give valuable new facts.

While, of course, much of the program of the Section on Medical Sciences of the Virginia Academy of Science will be filled with the results of laboratory work, a large portion of it should also have these accurate observations that may fall under the eye of any doctor, dentist or veterinarian. Those who give the results of pure laboratory experiments in this Section will profit by such papers, and certainly the clinician can learn by contemplation of the laboratory work. In Virginia there is an unusual opportunity to stimulate accurate observation and a scientific method of thinking and scientific curiosity by building up this Section.

Dr. H. B. Haag is the chairman of the Section this year, and Dr. I. D. Wilson is the secretary.

J. SHELTON HORSLEY.

February 17, 1938.

Public Health Statistics

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia.

The report of the State Health Department's bureau of communicable diseases, as compiled for the month of January, shows the following cases compared with the same month in 1937.

| | 1938 | 1937 |
|-------------------------------|-------|------|
| Typhoid and Paratyphoid | 12 | 26 |
| Diphtheria | 72 | 148 |
| Scarlet Fever | 192 | 192 |
| Measles | 1,487 | 667 |
| Meningitis | 14 | 44 |
| Poliomyelitis | 0 | 2 |

| | | |
|------------------------------|----|---|
| Rocky Mountain Spotted Fever | 0 | 0 |
| Typhus Fever | 0 | 1 |
| Undulant Fever | 3 | 2 |
| Tularemia | 13 | 6 |
| Smallpox | 1 | 1 |

DEVELOPMENTS IN SEWAGE TREATMENT

The disposal of sewage has been a major problem since the beginning of the early communities. Health authorities long have realized the importance of the collection and disposal of sewage and its significance to the well-being of the citizens.

Since early days, many different methods have been employed in sewage disposal. The type of treatment used today is a combination of the processes that has proven most effective.

Sanitary engineers have made notable progress in the design of new units and equipment. Moreover, much research and study of the types of treatment plants have been made.

No small part of the engineers' task is to promote interest in the sewage treatment problem among officials and citizens to the end that the needed improvements are obtained by the communities in need of such service. Much progress has been made in the last four and a half years in Virginia in this salesmanship phase of sanitary engineering work. Indeed, if the interest displayed during that period is a measure for the future, progress in sewage treatment should be very rapid.

Previous to July 1, 1934, there were thirty-one sewage treatment plants for cities and towns having populations of 500 or more. Today, there are fifty such plants serving an aggregate population of 136,660 as against a population of 69,930 for July 1, 1934. Similarly, for communities, colleges and institutions having populations of less than 500, today there are thirty-nine treatment plants serving an aggregate population of 8,380 as against twenty-one plants serving an aggregate population of 5,250 for July 1, 1934.

The Town of Virginia Beach has under construction a plant of very unique design. This plant was designed to meet the needs of this community at any and all rates of flow from minimum to intermediate, by either biological or chemical treatment, and for intermediate to maximum flows by chemical treatment alone or by a combination of chemical and biological treatment. The population served will vary from approximately 3,000 during the winter to about 30,000 during the summer months. This extreme variation was taken into consideration in the design.

This plant will cost approximately \$168,000.00. When completed it probably will be the most modern and up-to-date plant in this State. *This is the first and only sewage treatment plant in Virginia employing chemical coagulation of the sewage.*

Keysville, with a population of approximately 699, has under construction a plant for complete treatment of the sewage. This plant will employ settling, oxidation and chlorination of the effluent.

Middleburg, with a population of approximately 600, has under construction, and nearing completion, two plants for the complete treatment of the sewage. Each plant will employ preliminary settling, oxidation, chlorination and final sedimentation.

The Williamson Road Sanitary District, located in Roanoke County adjacent to the city of Roanoke, recently completed a new complete treatment plant at a cost of approximately \$60,000.00. This plant, employing clarification, separate sludge digestion, oxidation and chlorination of the effluent, was designed to serve a population of approximately 6,000.

The goal set by the State Department of Health involves effective sewage treatment facilities for all communities in Virginia.

Post-Graduate Course in Syphilis.

A four-months' postgraduate course in syphilis and its control, made possible by a grant from the United State Public Health Service through the New York State Department of Health, is being offered by New York University College of Medicine in the period, February 15 to June 15, 1938. While the course is designed to occupy the full time of students, a limited number wishing part-time instruction will be accepted.

Departments of the College interested in research, laboratory, preventive and clinical aspects of syphilis have been coordinated into a teaching unit for this course. Unusually ample clinical material will be made available in the wards and clinics of Bellevue Hospital and the clinic of the college.

Requirements for admission include: (1) Graduation from a recognized medical school; and (2) Approval of applicant by the Commissioner of Health (or health officer) of the State in which the applicant resides. No tuition fee is charged.

Alleghany-Botetourt-Rockbridge Health District.

Botetourt County recently joined the Alleghany-Rockbridge Health District, thus forming a tri-county

health department. Dr. Robert P. Cooke is the Health Officer of this District, with headquarters at Lexington. The district also maintains an office at Covington with Dr. James H. Gordon, Assistant Health Officer, in charge.

Truth About Medicine

In addition to the articles previously enumerated, the following have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association:

Lederle Laboratories.

Rabies Vaccine—Lederle (Semple Method), 7 vials package.

Eli Lilly & Co.

Combined Diphtheria Toxoid-Tetanus Toxoid-Alum Precipitated, one 5 cc. vial package.

Mead Johnson & Co.

Mead's Compound Syrup Oleum Percomorphum.

Parke, Davis & Co.

Staphylococcus Toxoid.

Solution Adrenalin Chloride 1:100.

E. R. Squibb & Sons.

Ampule Sterile Solution Procaine Hydrochloride—Squibb, 10 per cent, 2 cc.

New and Nonofficial Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Aminophyllin—Lederle.—A brand of aminophylline—N. N. R. (New and Nonofficial Remedies, 1937, 478). It is marketed in the form of ampuls 0.24 Gm., 10 cc., and 0.48 Gm., 2 cc., and in tablets 0.1 Gm. (1½ grains). Lederle Laboratories, Inc., Pearl River, N. Y.

Merthiolate Suppositories, 1:1,000.—Each suppository weighs approximately 10 Gm. and contains merthiolate (New and Nonofficial Remedies, 1937, p. 293) 1:1,000 in a glycerin and gelatin base consisting of 17.3 parts glycerin and 7.6 parts gelatin. Eli Lilly & Co., Indianapolis, Indiana.

Gas Gangrene Antitoxin, Concentrated and Refined.—An antitoxic serum prepared by immunizing horses against the toxins of *B. perfringens* (Cl. *welchii*) and *Vibrio septique* (Cl. *septique*). Potency is determined according to the methods described by the National Institute of Health. It is marketed in packages of one syringe or one vial containing 10,000 units of *B. perfringens* antitoxin and 10,000 units of *Vibrio septique* antitoxin. Each package contains a 1 cc. vial (1:10) antitoxin for determination of sensitivity to horse protein. Gilliland Laboratories, Inc., Marietta, Pa.

Tetanus-Gas Gangrene Antitoxin, Concentrated and Refined.—An antitoxic serum prepared by immunizing horses against the toxins of *B. tetani* (Cl. *tetani*), *B. perfringens* (Cl. *welchii*) and *Vibrio septique* (Cl.

oedematis-maligni). Potency is determined according to the methods described by the National Institute of Health. It is marketed in packages of one syringe or one vial containing 1,500 units of tetanus antitoxin, 2,000 units of *perfringens* antitoxin and 2,000 units of *Vibrio septique* antitoxin. Each package contains a 1 cc. vial of dilute (1:10) antitoxin for determination of sensitivity to horse protein. Gilliland Laboratories, Inc., Marietta, Pa.

Metrazol Ampules, 3 cc.—Each cubic centimeter contains 1½ grains of metrazol (New and Nonofficial Remedies, 1937, p. 301) in aqueous solution with 0.1 per cent sodium phosphate. Bilhuber-Knoll Corporation, Jersey City, N. J.

Accepted Devices for Physical Therapy

The following devices have been accepted by the Council on Physical Therapy of the American Medical Association for inclusion in its list of accepted devices for physical therapy:

Aloe Improved Cold Ray Quartz Lamp, Model CF-7890 (standard portable combination); Model CF-7894; Model 87; Aloe Standard Pedestal Cold Ray Quartz Lamp, and Aloe Standard Portable Cold Ray Quartz Lamp.—These lamps are of the mercury glow ultraviolet type. All of these lamps provide for an orificial burner except Model CF-7894. Therapeutically, the first three lamps mentioned generate sufficient intensity of ultraviolet radiation to produce a perceptible erythema on the average untanned skin in fifteen seconds at twelve inches from source to patient, forty seconds at twenty inches, and ninety seconds at thirty inches. The Aloe Standard Pedestal and Portable Models generate ultraviolet radiation of sufficient intensity to produce a perceptible erythema on the untanned skin in 0.5 minute at twelve inches from source to patient, 1.4 minutes at twenty inches, and 3.1 minutes at thirty inches. The orificial burner produces an erythema on untanned skin in five seconds with burner in contact with the skin, and fifteen seconds with burner at one inch from the skin. The A. S. Aloe Company, St. Louis. (*J. A. M. A.*, January 8, 1933, p. 128.)

Propaganda for Reform

The Nutritional Value of Spinach.—The Council on Foods reports that spinach, kale, turnip tops, beet leaves and other green leafy vegetables have long been considered as particularly desirable components of the diet because of their content of certain vitamins and minerals. Of these foods, spinach (*Spinacia oleracea*) has perhaps been most extensively studied. While some of the supposed nutritive properties of spinach are now known to be non-existent, still other properties are well established, and spinach should continue to be regarded as a wholesome food. The Council has reviewed the existing information regarding the composition and nutritional significance of spinach. The Council concludes from the evidence available that spinach may be regarded as a rich source of vitamin A and as a contributor of vitamin C, iron and roughage to the diet. While the total iron content of spinach is high as compared with other vegetable foods,

the evidence shows that this iron is not wholly available and is not well utilized by infants. The amount of the iron of spinach that is available to older children and adults has not been reported at the present time. The calcium of spinach is not well utilized by the organism because it is present largely in the form of calcium oxalate, which is insoluble in the fluids of the alimentary tract. Metabolism experiments show that the feeding of spinach is of no value during early infancy as a source of calcium. The evidence also shows that in young children and in adults receiving diets adequate in calcium content the inclusion of spinach does not adversely affect the calcium metabolism. (*J. A. M. A.*, December 4, 1937, p. 1907.)

Book Announcements

Clinical Endocrinology. By SAMUEL A. LOEWENBERG, M. D., F. A. C. P., Clinical Professor of Medicine, Jefferson Medical College, Philadelphia; Assistant Visiting Physician, Philadelphia General Hospital, Northern Liberties Hospital, and Eagleville Sanatorium for Consumptives; etc. Foreword by Hobart A. Reimann, M. D., Professor of Medicine and Clinical Medicine, Jefferson Medical College. Philadelphia. F. A. Davis Company. 1937. Octavo of xxvii-825 pages. With 194 illustrations and 37 charts and tables. Cloth. Price, \$8.00.

This is a good book which can be recommended to the practitioner interested in endocrinology. It discusses the history, physiology, pathology, and pharmacology of each gland, giving the names and dosages of the various endocrine preparations. It is well illustrated with many original photographs, although it must be admitted that a few of these are extremely poor from a photographic standpoint. It is to be regretted that the author does not refer to the excellent results obtained by Broster in the surgical treatment of virilism. Moreover, it is dangerous to recommend the rabbit ovulation test for the diagnosis of malignant tumors of the testes, since it has been definitely shown that this test does not have the requisite sensitivity for this purpose.

R. J. MAIN.

Artificial Fever. By CLARENCE A. NEYMANN, A. B., M. D., Associate Professor of Psychiatry, Northwestern University Medical School. Octavo of 294 pages. Charles C. Thomas, Springfield, Ill. Price, \$6.

Dr. Clarence A. Neymann is undoubtedly one of the leading authorities on therapeutic hyperpyrexia in the world; consequently, any word coming from him on this subject is of rich importance. That he has put the results of his research, experiments, and

treatments in a book and that he has done so in a form that is understandable and exceedingly easy to refer to is a boon to the practitioner. One will not find rash statements, undue criticism, or over-enthusiasm in this book, but rather direct statements backed by knowledge and restraint, plain diagrams and illustrations, and full, ready, and generous reference to other workers and the literature which they have produced on the subject. At the end of each chapter is a summary which will prove invaluable to the busy practitioner. The book is extraordinarily well-conceived, well-written, and well-printed, and should be carefully read not only by all physicians using any form of heat therapy, but by the profession at large. I congratulate Dr. Neymann.

BEVERLEY R. TUCKER.

New Books Available to Our Readers.

Recent acquisitions to the Library of the Medical College of Virginia are listed below. These are available to our readers, the only cost being return postage.

- Albee, F. H.—Injuries and diseases of the hip.
- Autobiography of Isaac J. Wistar.
- Bennett, H.—Cosmetic formulary.
- Bertwistle, A. P.—The role of chemiotaxis in bone growth.
- Burn, J. H.—Methods of biological assay.
- Clark & Brinton—Men, medicine and food in the U.S.S.R.
- Crew & Gibson—A dictionary of medico-legal terms.
- Cronin, A. J.—The citadel.
- Curie, E.—Madame Curie.
- Dietz, D.—Medical magic.
- Drinker, C. K.—Not so long ago.
- Du Bois, E. F.—The mechanism of heat loss and temperature regulation.
- Durfee, C. H.—To drink or not to drink.
- Franklin, K. J.—A monograph on veins.
- Frolov, Y. P.—Pavlov and his school.
- Furnas, C. C. & S. M.—Man, bread and destiny.
- Garratt, D. C.—Drugs and galenicals.
- Gifford, S. R.—Handbook of ocular therapeutics.
- Goldschmidt, R.—Ascaris, the biologist's story of life.
- Goldsmith, M.—Florence Nightingale.
- Gortner, R. A.—Selected topics in colloid chemistry.
- Griffin, F. W. W.—Scientific basis of physical education.
- Hall, I. S.—Diseases of the nose, throat and ear.
- Harris, H. A.—Bone growth in health and disease.
- Hill, A. B.—An investigation into the sickness experience of London transport workers, etc. Med. Res. Council, Ind. H. Res. Bd. Rep. 79.
- Hill, A. B.—Principles of medical statistics.
- Holman, E.—Arteriovenous aneurysm.
- Holmes, S. J.—The negro's struggle for survival.

Virginia Medical Monthly

Founded by LONDON B. EDWARDS, M. D., April, 1874
 Owned by MEDICAL SOCIETY OF VIRGINIA since November, 1919
 WYNDHAM B. BLANTON, M. D., *Editor*
 AGNES V. EDWARDS, Richmond, *Business Manager*

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All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Monthly, 1200 East Clay Street, Richmond, Va.

This journal is not responsible for the opinions and statements of its contributors.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Subscription Price: \$2.00 per annum in advance. Single Copies 25c.

VOLUME 65

MARCH, 1938

No. 3

Editorial

Grayson of Virginia.

It is not necessary for this journal to recite the facts of the late Rear Admiral Cary T. Grayson's successful career, but it is its pleasure to claim him as a son of Virginia. Born in Culpeper County, the son of John Cooke Grayson, M. D., he was brought up under the influence of medicine as a profession. The very name of his childhood home, "Salubria", echoes the trend of his family's interests. It seems poetic justice that in all his contacts with the great of this earth in his own country and abroad he never lost his conviction of the enduring worth of the family physician, and that he will be remembered perhaps longest as the personal physician of three presidents in the White House. When his alma mater, the Medical College of Virginia, bestowed upon him an honorary degree in 1931, his address was a veritable pæon of praise of the general practitioner. The boy is father of the man, and it requires little imagination to feel that Admiral Grayson was endowed by his state with his high ideals of a gentleman, a sportsman and a physician.

The Meeting of the Historical Section.

Another notable meeting of the Historical Section of the Richmond Academy of Medicine was held on February the eighth, when several interesting and rare books were added to the Miller Library. Dr. Harry J. Warthen spoke on *Medical Manuals of the War between the States* and Dr. J. C. Flippin on *Walter*

Reed—Experiences and Contacts in Baltimore. A portrait of Walter Reed, characterized by Major General Walter L. Reed as "the best portrait of my father that I have seen", was presented to the Academy. The address of the evening was delivered by Lieutenant Colonel Edgar Erskine Hume, M. C., U. S. A., on *The Medical Work of the Knights Hospitallers, 1020-1937*. The meeting was preceded by a banquet attended by a large number of doctors and their wives not only from Richmond but from the State as well.

More About Virginia Medical History.

The medical history of Virginia received national attention this month when the January issue of the *Annals of Medical History*, profusely illustrated, was released from the press, bearing on its cover and frontispiece pictures of Robley Dunglison, and including in its table of contents only articles dealing with our State and its proud sons, written by Virginians.

The first article, *Hunter Holmes McGuire, M. D.*, written by his son Dr. Stuart McGuire, is the first of two installments of the most complete account of this famous figure that has yet been published. An account of *George Ben Johnston, M. D., LL. D.*, written by Dr. J. Morrison Hutcheson follows. Dr. Joseph L. Miller writes on *Caesarean Section in Virginia in the Pre-aseptic Era, 1794-1879*, and Dr. M. Pierce Rucker on *Dr. John Peter Mettauer: An*

Early Southern Gynecologist. Thomas Jefferson's *Influence on the Foundation of Medical Instruction at the University of Virginia* is contributed by Dr. Andrew deJarnette Hart, Jr., and *Pioneer Medicine in Virginia*, by Dr. Blanton P. Seward. Dr. Hugh H. Trout wrote *The "Scotch-Irish" of the Valley of Virginia, and their Influence on Medical Progress in America*, Dr. Harry J. Warthen, *Medicine and Shockoe Hill*, and Dr. Beverley R. Tucker, *Development of Psychiatry and Neurology in Virginia*.

Only by such efforts to write the record of those who wrought well can we who follow discharge the debt we owe them.

In Which an English Writer Gives Americans no Credit.

For *Leaves from a Surgeon's Case Book*, written by an English surgeon and published under the pseudonym of James Harpole, we prophesy popularity among the laity. Most people will like it if they like popularly written science. They will like it for its simplicity, its human interest, and the thrilling things it tells about the science that of all sciences has made the greatest advance in our generation. This is the story of man's triumph over some of the mysteries of his environment, including his own body. It is an account of intellectual adventure, of the banishment of fear, of prolonging and saving human life, of making man happier and stronger.

In medicine as in any science, discovery is constantly making obsolete the knowledge of yesterday. There are no "always" and "nevers". Superlatives are under suspicion and dogmatic statements are rarely allowable. Qualifying clauses are essential. "If", "when" and "perhaps" hedge every statement of scientific fact. There is no room for imagination except in conception, and often the better reading any statement of medical progress makes, the further it is apt to be from the truth. It is necessary to have these things in mind before following too credibly James Harpole's guidance along the many bypaths of science into which he takes us. Physicians will find statements in this book which should be qualified for the present at least.

Without fear, offense or pessimism, the author talks about people with blood and nerves, dyspepsia and blindness, cancer and tuberculosis, subjects of intense interest to all of us who stand in line, dreading or fighting these very arch-enemies ourselves.

There is hardly a paragraph more technical than a headache or a bunion.

There is much that is new. It might easily be called the last word in the healing art. It tells how the paralyzant of the famous poisoned arrows of certain South American Indians is now being used to conquer lockjaw; how snake venom and a chemical combination of egg white with potassium bromide may arrest those alarming hemorrhages that are constantly threatening the life of familial bleeders such as the world has come to know existed in the royal house of Russia; what we have to hope for from recent investigations pointing to a virus as the cause of influenza and the possibility of an effective vaccine in prevention; what is being accomplished by new methods in the management of tuberculosis particularly in the field of surgery, and of the success of after-care of convalescents in village settlements at present being tried out in England; how surgery of the peripheral nerves may alleviate certain types of paralysis; how some strange kinds of blindness yield to psychotherapy and others to surgery; how new anaesthetics and sedatives have made child bearing easier; how a new drug like sulfanilamide has reduced the mortality astonishingly in virulent infections such as those due to the streptococcus; what modern surgery has accomplished in suturing the wounds of the human heart; what are the triumphs of plastic surgery, particularly as they have overcome the disfigurements of war wounds and civil life mutilations; and finally, what is the hope of glandular therapy and other methods designed to offer questing humanity a true fountain of youth.

The book is in two parts. The first part describes "some of my cases", the author explains in his preface, "to illustrate the immense changes in treatment that have taken place in the last twenty-five years". The persons whose stories he tells are accordingly somewhat ghostlike since they are merely the means to an end. They have none of the vibrant individuality or gripping story quality that made *San Michele*, for instance, a best seller. Neither does the author build around himself a fabulous and unconvincing halo. He has his mind on the best treatment for the patient in hand, and thus proves himself a good doctor.

In an attempt to decribe the romance of medicine in more general terms, the second part of the book somewhat spoils the continuity of the volume and introduces some repetition. One chapter relates the

role of the mosquito in human destiny. It might just as well have related the equally important role of the louse and the rat. Virginians will be displeased because no mention is made of Walter Reed. Americans must admit that judged by the author's information the contribution of their men of science has been *nil*. The selection of subjects to prove the growing mastery of medicine over the communicable diseases was obviously determined by the author's experience, first as an English military surgeon and later as a surgeon in private practice. Some of these examples, though well polished for presentation, are now worn from frequent use. There is a chapter on taming the microbe, another on the role of the laboratory, one on the significance of the vitamins, and a final exposition of the relation of our glands of internal secretion to the real person we are, and how with heredity and environment they constitute the tripod upon which personality rests.

To most lay readers *Leaves from a Surgeon's Case-Book* will prove entertaining. They must make allowance for its dash of Anglomania and its flair for the superlative, but it will tell them something that they did not know, and in so doing will cheer, comfort, or inspire new faith in the power of men of science to wrest the truth from nature and fight back the forces of destruction. For this reason the doctor may put it upon his patient's prescribed reading list and be glad when he sees it upon his patient's bedside table.

Hertzler's Monograph on the Neck.

To the surgeon the neck has long been one of the most interesting of all the divisions of the human body, and for this reason alone Arthur E. Hertzler's *Surgical Pathology of the Neck* will receive a warm welcome. This is a monograph of some 235 pages on good paper, freely illustrated and adapted to ready reference. It is largely based upon clinical and operating room study. Its field of usefulness extends beyond that of surgery, for the internist and even the general practitioner will find it a valuable aid in clinical practice where diseases of the neck frequently present themselves for differential diagnosis and for decision as to the best methods of treatment. At least one bit of advice given by the author in his preface is worth passing on here: he deplores "the present tendency to treat all lesions of the neck by irradiation without a definite pathologic diagnosis".

Medical Bills Before the Legislature.

Few doctors in the State of Virginia have the opportunity of knowing what bills are placed before the State Legislature each biennium for incorporation among the laws of the Commonwealth. The following bills have been or will be presented before the close of the present session of the Legislature:

Naturopathy, House Bill No. 264,

"Defining naturopathy, providing for and regulating the practice of naturopathy in the State of Virginia; creating the Virginia State Board of Naturopathic Examiners, fixing their terms of office; providing for the appointment of members of said board, defining the powers and duties of said board; to establish rules and regulations governing said board; providing for licensing and examination of naturopaths in the State of Virginia; providing for the charging of fees for the same; regulating the use of professional terms and abbreviations; providing for prosecution and penalties for violations of the provisions of this act, and repealing all laws and parts of laws in conflict herewith . . . naturopathy is hereby defined to mean the use and practice of psychological, mechanical and material health sciences to aid in purifying, cleansing and normalizing human tissues for the preservation or restoration of health. . . . Naturopathic practice employs and includes phytotherapy, dietetics, hygiene, psychotherapy, hydro-therapy, zonotherapy, bio-chemistry, external applications, physiotherapy (electrotherapy), mechano-therapy, manipulation, mechanical and electrical appliances, sanitation and helio-therapy, non-toxic herbs and plants and their derivations administered, applied and prescribed, minor surgery and obstetrics as a first aid and emergency measure. . . ."

Drugs, etc., House Bill No. 169,

"To amend and re-enact an act entitled 'an act to regulate the manufacture of drugs, medicines, toilet preparations, dentifrices and cosmetics; to provide for the issuance and revocation of permits therefor by the Virginia Board of Pharmacy and for hearings on applications for such permits and appeals from the action of said board thereon; and to prescribe penalties,' . . ."

Optometry, Senate Bill No. 134,

"To amend and re-enact Sections 1626, 1631 and 1632, as amended, and 1635, 1636, 1637 and 1638, as amended, of the Code of Virginia, in relation to optometry and the practice of optometry in Virginia. . . . The splitting or dividing of a fee with any person or persons other than with a duly registered optometrist who is a legal partner", is not approved of.

Collapse therapy program, Senate Bill No. 49,

"To authorize, empower and direct the State Board of Health to establish a state-wide collapse therapy

program and a follow-up program for the treatment of tuberculosis patients, to prescribe its powers and duties in connection therewith and to appropriate \$80,000 to carry out the provisions of this act".

Venereal disease, House Bill No. 9,

"To amend the Code of Virginia by adding thereto a new section numbered 5074-a, to prevent persons having any venereal disease, tuberculosis in an infectious stage, or insanity, from marrying."

Amended to read "to prevent persons having syphilis from marrying".

Injured employees, House Bill No. 130,

"To amend and re-enact Section 26, as amended, of the Virginia Workmen's Compensation Act, which became a law March 21, 1918, in relation to medical attention to be furnished to injured employees. . . . For a period not exceeding sixty days after an accident the employer shall furnish or cause to be furnished, free of charge to the injured employee, such necessary medical attention as the nature of the accident may require, . . ."

Local boards of health, House Bill No. 291,

"To amend and re-enact Section 1493 of the Code of Virginia, in relation to duties of local boards of health. . . . Such local boards of health shall have charge of the sanitary affairs of the respective cities, counties or towns for which they are appointed, and shall, subject to the provisions of this chapter, have control of the prevention and eradication of contagious and infectious diseases, and the removal and quaran-

tine of suspects. They may provide for compulsory vaccination and the administering of toxoid, the prevention, restriction and care of smallpox and other contagious or infectious diseases, and shall, with the consent of the board of supervisors of the county or the council of the city or town, as the case may be, fix the compensation for the officers or agents employed in discharging such duties relating to the abatement of nuisances."

In addition to the above, the Farmville pharmacist, E. W. Sanford, is sponsoring four other bills dealing with matters pharmaceutical: a "fair trade" act, designed to make Virginia's pharmaceutical laws conform with similar laws in other States; a bill to revise the manufacturers' license law, requiring that applicants for licenses to manufacture drugs be registered pharmacists; a bill regulating working hours of assistants, issuance of permits to rural physicians and the sale of patented medicines and other remedies by general merchants; an amendment to the code to include regulations covering "definitions, adulterations and misbranding of drugs and cosmetics".

From the above it would seem that everybody has been busy with new medical legislation except the doctors through their state association, the Medical Society of Virginia.

Department of Clinical and Medical Education of the Medical Society of Virginia

Executive Committee Meeting.

A meeting of the Executive Committee was held in the Richmond Academy of Medicine Building on January 25. The following were present: Dr. J. M. Hutcheson, Chairman; Dr. J. C. Flippin; Dr. Lee Sutton; Dr. H. A. Spitler; Dr. J. M. Lynch; Mr. G. B. Zehmer, Executive Secretary; and Mr. J. A. Rorer, Assistant Executive Secretary.

The Chairman reported on a questionnaire which he had sent to medical societies of other states to determine what was being done in postgraduate medical instruction. He stated that few states were doing as much as Virginia in this field.

The Executive Secretary was instructed to make plans for offering several short courses in Internal

Medicine in different sections of the State and to arrange with the two Medical Schools to furnish instructors from their faculties.

Since the Executive Secretary reported that the State will have been covered for the second time by the end of the year with courses in Obstetrics, a committee consisting of Dr. Sutton, Dr. Lynch, and Dr. Riffin was appointed to investigate new methods of presenting postgraduate instruction in Obstetrics and Gynecology to the doctors of the State. The committee was requested to report at the next meeting.

The Executive Secretary reported that four circuits in Obstetrics and Gynecology and one in Pediatrics had been completed since the August meeting.

Obstetrics and Gynecology.

Since the last issue of the *Monthly*, Dr. Shamburger has completed his circuit in Northern Virginia covering the counties of Fairfax, Fauquier, and Culpeper. Meetings were held at Fairfax, Warrenton, and Culpeper each week during January and the first week in February. The following doctors attended some or all the lectures:

| FAIRFAX | WARRENTON |
|----------------------|----------------------|
| Dr. W. P. Caton | Dr. G. H. Davis |
| Dr. R. E. Feagans | Dr. J. F. Folk |
| Dr. E. M. Holmes | Dr. H. L. Hamilton |
| Dr. E. H. Marsteller | Dr. M. B. Hiden |
| Dr. Wm. Myer | Dr. J. E. Knight |
| Dr. S. Newman | Dr. E. H. Marsteller |
| Dr. E. C. Shull | Dr. S. McBryde |
| | Dr. V. L. McCullers |
| | Dr. W. C. Payne |
| | Dr. Wm. R. Pretlow |
| | Dr. H. L. Townsend |
| | Dr. W. G. Trow |
| | Dr. C. W. Warren |
| | Dr. J. D. Sinclair |
| | Dr. R. Mason |
| | Dr. H. C. Grant |

From February 14 to March 19 Dr. Shamburger will conduct a course in the city of Danville and the counties of Bedford, Campbell, Pittsylvania, and Henry. Meetings will be held at Bedford, Altavista, Chatham, Danville, and Martinsville.

Pediatrics.

As has been announced previously, Dr. Robert B. Hightower has assumed his duties as instructor in Pediatrics. During January and the first week in February he offered his course of lectures on the same circuit in Northern Virginia with Dr. Shamburger. The topics dealt with were:

The Feeding of Infants and Children.
The Acute Abdomen in Childhood.
The Premature Infant.
Acute Nutritional Disturbances.
Immunizations—Dangerous Drugs.

During the five weeks' period from February 14 to March 19, Dr. Hightower will offer a course of lectures in Fredericksburg and the Northern Neck of Virginia. Meetings will be held at Fredericksburg, Oak Grove, Warsaw, Heathsville, and Kilmarnock.

Local societies which would like to have the post-graduate course in Obstetrics and Gynecology before the end of the year may schedule a course now. Likewise those who would like to take advantage of the Department's offer for a short course in Internal Medicine should communicate with the Executive Secretary. Since only a limited number of courses can be offered, preference will be given to those local societies making the first requests.

GEO. B. ZEHMER,
Executive Secretary.

Proceedings of Societies

The Wise County Medical Society

Met in Norton on January 26, and the members and visitors were entertained at dinner at Hotel Norton, by the doctors in Norton and that vicinity. Drs. Otis L. Anderson and L. J. Roper, of the State Department of Health, invited guests, exhibited the Department's films on the diagnosis and treatment of syphilis. At the business session which followed, resolutions presented at the Roanoke meeting of the Medical Society of Virginia, opposing suggestions made by Senator James Hamilton Lewis before the House of Delegates of the American Medical Association last June, were read and whole-heartedly endorsed, and the Society pledged its solid support in

any steps the State Society may deem necessary to take in regard to this matter.

At this time, Dr. William Baynard Barton, recently located at Stonega, was elected to membership. The annual election of officers at this meeting was as follows: President, Dr. C. Robert Jones of Dorchester; vice-presidents, Drs. A. W. Reeser of Appalachia, D. C. Keister of Osaka, and J. R. Massie of Norton; and secretary-treasurer, Dr. C. L. Harshbarger (re-elected) of Norton. Drs. F. E. Handy of Appalachia, G. T. Foust of Norton, and W. R. Culbertson of Coeburn were named as members of the board of censors.

The Mid-Tidewater Medical Society

Held its quarterly meeting in West Point, on January 25, with Dr. Warner Lewis, of Aylett, presiding in the absence of the president, Dr. Clarence Campbell. At the morning session, Dr. Hawes Campbell, of King William, presented a paper on "The Distribution of Public Welfare Funds in the Counties and Cities of Virginia." In the afternoon, Dr. L. J. Whitehead, of Richmond, spoke on "The Treatment of Acute Infections with X-Ray," the discussion of which was led by Dr. H. A. Tabb of Gloucester. Dr. Wright Clarkson, Petersburg, read a paper on "Cancer and Its Treatment by Radium and X-Ray" and Dr. Page Mauck, of Richmond, led the discussion.

At the business meeting, the following resolutions were adopted:

WHEREAS, the Virginia Tuberculosis Association has brought to the attention of the medical profession of the State the incidence, mortality rate, and the increased demand for sanatoria beds in Virginia at this time, and

WHEREAS, the medical profession knows the difficulty of getting patients admitted to the sanatoria at the present time, because of a limited number of beds, and the dire need for more beds for the indigent cases,

THEREFORE, BE IT RESOLVED: *First*, that the Mid-Tidewater Medical Society endorse the efforts being made to increase our sanatorium facilities;

Second, that this resolution be sent to the various delegates and senators in the present sitting Virginia Legislature, and that the members of this society be urged to convey to their respective representatives the need of suggestions made by the Virginia Tuberculosis Association in their recent report, being made possible by the present sitting legislature.

M. H. HARRIS, M. D., *Secretary*.

The Nansemond County Medical Society

Met at the Municipal Building in Suffolk on January 21. A full attendance was present, including a visitor, Dr. E. M. Babb of Ivor. Dr. W. Holmes Chapman, Jr., of the staff of Lakeview Hospital, was elected to membership. The business meeting, presided over by Dr. Edward C. Joyner, was followed by a paper presented by the guest speaker of the evening, Dr. H. B. Mulholland, professor of the practice of medicine, at the University of Virginia Medical School. Dr. Mulholland's paper on "New Advances in Therapy", accompanied by lantern slides, took up a number of the more recently introduced drugs. Among them he discussed sulfanilamide, benzedrine sulphate and protamin-zinc-insu-

lin. He also covered the pneumonias, their typing and treatment with the anti-sera.

The Society appointed a committee to cooperate with the Health Department and the local Tuberculosis Association in a concerted plan of attack on the tuberculosis problem in the county.

Roanoke Academy of Medicine.

The first dinner meeting for the year was held at the Patrick Henry Hotel on February 7, at which time Dr. Thomas E. Neill, President of the District of Columbia Medical Society, spoke on "The Beginning of Socialized Medicine in the Government," and Dr. A. B. (Sandy) Moore, also of Washington, opened the discussion, giving his views on socialized medicine.

At the January meeting, Drs. U. W. Massie, E. C. Simmons and Homer Bartley, all of Roanoke, were elected to membership. At that meeting also, the executive committee, appointed by the president, was approved as follows: Dr. W. L. Powell, chairman, and Drs. H. B. Stone, Sr., W. P. Jackson, Hugh H. Trout and Churchill Robertson.

Richmond Academy of Medicine.

The Section on the History of Medicine of the Academy held its annual dinner meeting on February 8, with Dr. Wyndham Blanton, chairman, presiding. This was the first of a series of annual "Walter Reed Days," to be observed on the second Tuesday in February, at which time this Section will have its meeting. A portrait of Walter Reed, painted by Bjorn Iglis, was presented to the Academy of Medicine by the history section. The guest of honor and principal speaker for the evening was Lieutenant-Colonel Edgar Erskine Hume, formerly librarian of the Army Medical Library, but now stationed at Carlisle Barracks, Pa., with the U. S. Army. Others on the program were Drs. J. C. Flippin, University of Virginia and Dr. Harry J. Warthen, Richmond.

Dr. J. Shelton Horsley was elected chairman of the Section with Dr. W. B. Porter, vice-chairman, and Dr. B. R. Wellford, secretary-treasurer. Dr. Hume was elected to honorary membership.

At the regular meeting of the Academy on February 22, the following papers were presented: Primary Streptococci Peritonitis with Recovery Following Sulfanilamide Therapy and Operation by Dr. John S. Horsley, Jr.; The Treatment of Varicose Veins by Sclerosing Agents by Dr. Donald S. Daniel; and

Life Insurance Medicine's Approach to Prognosis by Dr. Ennion S. Williams.

The Lynchburg Academy of Medicine,

Held its regular meeting at the Elks' Club in Lynchburg on February 7, with the President, Dr. Elisha Barksdale, presiding.

Dr. John R. Saunders of Madison Heights was elected to membership in the Academy.

The resolutions adopted by the House of Delegates of the Medical Society of Virginia meeting in Roanoke, October 12, 1937, condemning unreservedly the plans and proposals of Senator Lewis which tend to Federalize Medicine, were unanimously approved by the local Society.

The committee studying Group Hospitalization, consisting of Drs. John Hundley, Jr., chairman, F. O. Plunkett and H. H. Hurt, made a complete and thorough report on their exhaustive studies. They recommended that the Academy approve the plan of Group Hospitalization under certain restrictions which were filed with the Secretary in the form of a motion which was passed by the Academy.

Due to the lengthy business session there was no scientific program.

C. E. KEEFER,
Secretary-Treasurer.

The Lee County Medical Society

Held its regular meeting in Pennington Gap on February 3, at which time the following officers were elected for the year: President, Dr. B. C. Grigsby of St. Charles; vice-presidents, Dr. W. L. Griggs of Benedict and Dr. J. G. McNiel of St. Charles; and secretary-treasurer, Dr. J. B. Muncy (re-elected) of Pennington Gap. Dr. J. W. Tankard of the Lee General Hospital, Pennington Gap, read an interesting and instructive paper on "Meckel's Diverticulum and Review of the Literature."

The Alexandria Medical Society,

At its annual meeting on February 10, elected Dr. Carson L. Fifer as president and Dr. C. T. Arnette as secretary-treasurer. Both are of Alexandria. The retiring officers were Dr. Wm. B. Wilkins and Dr. James A. Gooch, respectively.

News Notes

Dates for Annual Meeting of the Medical Society of Virginia.

At the meeting of the Council, early in February, October 4, 5 and 6 were selected as dates for the sixty-ninth annual meeting of the Medical Society of Virginia. This will be in Danville, with headquarters at Hotel Danville. Dr. I. C. Harrison was recently announced as general chairman for the meeting.

Changes in Health District Officers.

Dr. S. D. Gardner, who has completed a post-graduate course at the Johns Hopkins School of Hygiene and Public Health, has been re-appointed Health Officer of the Valley Health District. The headquarters remain in Luray. Dr. Linwood Farley will continue as Assistant Health Officer in this District.

Dr. J. B. Porterfield recently director of the Peninsula Health District, on leave of absence from Johns Hopkins University School of Hygiene and Public Health, has been named to fill temporarily the post of director of the Hanover County Health District

which has been vacant since Dr. H. B. Magill left there the first of the year.

News from Medical College of Virginia.

The first program to be presented in the Centennial Celebration of the Medical College of Virginia was the Pharmaceutical Symposium held on February 17. The general topic of the discussions was "The Pharmacist, The Physician and Public Health."

The guest of honor was Dr. J. Leon Lascoff of New York City, president-elect of the American Pharmaceutical Association, who spoke on "The Pharmacist and the Physician." Dr. I. C. Riffin, State Health Commissioner of Virginia, presented a paper on "The Pharmacist and Public Health," and Mr. Eldon Roberts, Jr., an alumnus of the college and a retail pharmacist in Newport News, had as his subject "The Practice of Professional Pharmacy."

Others taking part in the program were: Dr. W. T. Sanger, President of the College; Mr. A. L. I. Winne, Secretary of the State Board of Pharmacy, Mr. Thomas L. Howard, Dr. Roshier W. Miller and Dr. Harvey B. Haag, all of Richmond.

There was a large attendance of pharmacists from all parts of the State and a number from West Virginia and North Carolina.

The pharmacy symposium was followed on February 21 by the symposium of the school of dentistry with the home-coming of alumni. This program included lectures by various speakers, exhibits and clinical displays. During March the school of nursing will have its program, and the last week in April the school of medicine will have a series of lectures. The culmination of the Centennial year will be at commencement on June 7 with a special program at 10:30 in the morning, followed by graduation exercises at night at the Mosque theatre.

Dr. William de Berniere MacNider, Professor of Pharmacology, University of North Carolina, lectured to the Brown Sequard Society on February 10.

Dr. W. T. Sanger, President of the College, attended the meeting of the Council on Medical Education and Hospitals of the American Medical Association in Chicago, February 14 and 15.

The College has been the recipient of gifts totaling \$30,194.50 since December.

A new telephone and telepage system has been installed. The new switchboard is located on the seventh floor of the clinic and laboratory building. This can take care of needs for many years.

University of Virginia News.

The Neuropsychiatric Society of Virginia held its first meeting for 1938 at the University Hospital on January 26. Papers were presented by Dr. D. C. Wilson, Dr. Dudley C. Smith, Dr. J. M. Meredith, Dr. J. M. Hitch, Dr. S. G. Bedell, Dr. H. P. Newbill and Miss Steele Houchins, all of the University of Virginia Hospital Staff.

On February 7, Dr. J. W. Beard, Director of Experimental Surgery at Duke University, addressed the University of Virginia Medical Society on the subject of The Isolation and Properties of the Papilloma Virus Protein.

On February 8, Dean J. C. Flippin gave an address at the annual meeting of the Historical Section of the Richmond Academy of Medicine, on the occasion of the unveiling of a portrait of Walter

Reed. At this meeting Dr. Flippin was elected to honorary membership in the Historical Section.

The second Alpha Omega Alpha address before the University of Virginia Medical Society was given on February 21 by Dr. Bayard T. Horton, of the Mayo Clinic. Dr. Horton spoke on Short Circuits in the Circulation.

Dr. William R. Weisiger,

Richmond, was elected grand junior deacon of the Grand Lodge, Ancient Free and Accepted Masons, of the Commonwealth of Virginia, held in this city on February 10.

Dr. A. L. Tynes, Jr.,

Captain, M. C., U. S. Army, has just returned from Panama and been assigned to duty at the Walter Reed General Hospital, Washington, D. C. He was formerly of Staunton and a member of the class of '30, University of Virginia School of Medicine.

Married.

Dr. Herbert DeGrange Wolff, Jr., of Alexandria, and Miss Anne Henderson Froehling of Richmond, February 12.

"The Foundation Prize."

Rules governing the award of "The Foundation Prize" of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons have recently been published and include the following items: The award shall consist of \$500.00; eligible contestants shall include only interns, residents, or graduate students in obstetrics, gynecology, or abdominal surgery and physicians who are actively practicing or teaching these subjects; manuscripts must be limited to 5,000 words, typewritten in double spacing on one side of the sheet, with ample margins, and must be presented under a nom-de-plume which shall in no way indicate the author's identity, this to be given in a sealed envelope accompanying the manuscript containing card with name and address of contestant; manuscripts must be in hands of the secretary before June 1; and the successful candidate must appear in person to present his contribution as a part of the regular scientific program of the annual meeting of the Association.

Further information may be obtained from Dr. James R. Bloss, Secretary, 418 Eleventh St., Huntington, W. Va.

News from the New York Polyclinic Medical School and Hospital.

Dr. Russell L. Cecil is scheduled for a lecture on March 2, on "Bacterial Endocarditis"—1. Classification of Bacterial Endocarditis according to etiology. 2. Description of the various types. 3. Relation to focal infection. 4. Clinical course. 5. Prognosis and treatment.

At the February meeting of the Polyclinic Clinical Society, the following program was presented:

1. "Spinal anesthesia" by Thomas F. McLaughlin, M. D.

2. "Modern concepts on Addisonian or Macrocytic Anemia" by Lea A. Riely, M. D., Oklahoma State University. The discussion was opened by James P. Croce, M. D.

3. "Clinical review of results of 241 operations for Essential Hypertension" by George W. Crile, M. D., Cleveland, Ohio. The discussion was opened by S. Philip Goodhart, M. D.

Dr. J. M. Meredith

Of the University of Virginia has been appointed to the Committee on Relations with Other Educational Institutions by the president of the Associated Pennsylvania Clubs of the World, which will meet in Richmond next November.

Dr. Sidney S. Negus,

Professor of biochemistry at the Medical College of Virginia, Richmond, was one of two to receive the highest honor awarded by the Boy Scouts of America at a dinner in their honor on February 8, given by the Silver Beaver Committee of the Richmond Area Council of Boy Scouts.

American Board of Obstetrics and Gynecology.

The general oral, clinical and pathological examinations for all candidates (Groups A and B) will be conducted by the entire Board, meeting in San Francisco, California, on June 13, and 14, 1938, immediately prior to the meeting of the American Medical Association.

Applications for admission to the June 1938 Group A examinations must be on an official application form and filed in the Secretary's Office before April 1, 1938.

The annual informal Dinner and General Meeting of the Board will be held at the Palace Hotel, San Francisco, on Wednesday evening, June 15. Dr.

William D. Cutter, Secretary of the Council on Medical Education and Hospitals of the American Medical Association will be the guest speaker, and the Diplomates certified at the preceding days' examinations will be introduced individually. All Diplomates are invited to attend the dinner meeting, and to bring as guests their wives and any persons interested in the work of the Board.

For further information and application blanks address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pa.

The Jefferson Medical College of Philadelphia.

Dr. Karl Kornblum, Assistant Professor of Radiology, and Director of the X-ray-Radium Department, of the Graduate School of Medicine and Hospital of the University of Pennsylvania, has been elected Professor of Roentgenology in the Jefferson Medical College of Philadelphia, to succeed the late Dr. Willis F. Manges. He is a member of the American Roentgen Ray Society and the American College of Radiology, as well as a number of other scientific societies. Doctor Kornblum assumed his duties at the Jefferson Medical College on January 1, 1938.

The following promotions in the teaching staff have been announced: Dr. Thaddeus L. Montgomery, to Clinical Professor of Obstetrics; Dr. A. Spencer Kaufman, to Associate Professor of Otolaryngology; Dr. Arthur J. Wagers, to Assistant Professor of Laryngology; Dr. Austin T. Smith, to Assistant Professor of Laryngology; Dr. William P. Hearn, to Assistant Professor of Surgery; Dr. Andrew J. Ramsay, to Assistant Professor of Histology and Embryology.

Doctors as Bank Directors.

Names of the following doctors have recently been noted as directors of banks in their communities: Dr. C. D. Marchant of Harmony Village, Dr. W. P. Jones of Urbanna, Dr. H. C. Rucker of Mattoax, Dr. J. L. Hamner of Mannboro, Dr. R. D. Bates of Newtown, Dr. Thomas B. Latane of Stevensville, and Dr. A. W. Lewis of Aylett.

Post-Graduate Cruise.

The Second Vacation Post-Graduate Cruise of the Seaboard Medical Association of Virginia and North Carolina will take place June 11 to 16, 1938, on the Hamburg-American World Cruising Ship *Re-*

liance. A good practical program is in the offing. This is the same ship which took the Association on its first cruise two years ago. The port of call will be Norfolk, Saturday afternoon, June 11, returning to Norfolk the following Thursday noon. This allows two days and one night at Bermuda. The members and their friends will remain on the ship for lodging and meals, going ashore at pleasure.

The expense is quite nominal and there will be room available for doctors and their friends other than members. The President of the Seaboard Association is Dr. W. I. Wooten of Greenville, N. C., and the Secretary-Treasurer is Dr. Clarence Porter Jones of Newport News.

Dr. Richard C. Neale,

An alumnus of the Medical College of Virginia, who has been connected with the Biochemical Research Foundation of the Franklin Institute in Philadelphia for the past two years, has returned to Richmond, where he has opened The Physician's Service Laboratories.

Dr. Thomas L. Gemmill,

For the past two years connected with the medical staff at Central State Hospital, Petersburg, has located at Radford, Va., where he is associated with Dr. W. B. Fuqua in the practice of general medicine.

Dr. O. T. Amory,

Of Newport News, early in February, was named chairman of the recently organized Virginia Salt-water Fishermen's Association.

Physicians' Tour of America En Route to the A. M. A. Convention.

According to latest reports reaching us, physicians and their families are evincing a very keen interest in the arrangements made by the American Express Travel Service with the cooperation of your society to see America en route to and returning from the San Francisco Convention. The "See America" movement is indorsed by approximately twenty-five State Medical Societies. It presents an unprecedented opportunity for our members and their families to join with their colleagues from other States, and enjoy the facilities and service of De Luxe Special Trains, and at the same time visit the many scenic attractions of our Western States.

Picture the beauty and relaxation of such scenes as the Indian Detour in New Mexico, the Grand Canyon of Arizona, Los Angeles and the beauties of Southern California, Santa Catalina Island, the fa-

mous Columbia River Highway in Oregon, Seattle, Washington, Victoria, Vancouver, Lake Louise and Banff in the Canadian Rockies, Yellowstone National Park, Colorado Springs and many others.

The all-inclusive price is unusually low because of the cooperation of so many medical societies. It is, therefore, recommended that our members avail themselves of this most attractive and unusual program which may not again present itself for some time. An attractive folder, describing these travel arrangements, may be obtained through the Secretary's office or the Transportation Agents, The American Express Travel Service, 1414 F Street, N. W., Washington, D. C.

News Notes from Duke University School of Medicine.

During the week commencing January 24 a laboratory course of instruction in pneumonia typing was given at Duke Hospital, for which sixty-nine technicians of the State registered. This course was a part of a State-wide program undertaken by the State Board of Health and cooperating agencies to combat the prevalence and mortality of pneumonia. On Friday, January 28, a Symposium on Pneumonia was given, to which the Medical Profession was invited. The following participated in the program: Drs. Wiley D. Forbus, Douglas H. Sprunt, David T. Smith, Robert J. Reeves, Frederick M. Hanes, Deryl Hart and Angus McBryde.

On January 31, Dr. E. G. Crabtree, of Harvard Medical School, lectured to the staff and students on the Fluid Balance in the Puerperium.

On February 14, Dr. Victor Heizer, of the Rockefeller Foundation and author of "An America Doctor's Odyssey," spoke at Duke University on the public health work done in tropical regions by American physicians.

Dr. Nelson Mercer,

Formerly of Richmond, is now located in Philadelphia, Pa., where he is resident physician at the Home for Consumptives, Chestnut Hill, the oldest tuberculosis sanatorium in the United States. For the past year, Dr. Mercer was resident physician at Battle Hill Sanatorium, Atlanta, Ga.

Post-Graduate Institute of the Philadelphia County Medical Society.

The Third Annual Post-Graduate Institute, offer-

ing an intensive and interesting study of the Diseases of the Digestive Tract, will be conducted by The Philadelphia County Medical Society from March 28 to April 1, inclusive. The program to be held in the Bellevue-Stratford Hotel, Philadelphia, has been designed to meet the needs of all members of the profession, but particularly those in general practice. There will be seventy-three lecturers, these having been selected from among the foremost teachers.

The only charge is a \$5.00 registration fee to cover the Institute's expenses. All members of county medical societies are invited and full information may be obtained from The Philadelphia County Medical Society, 21st and Spruce Streets, Philadelphia, Pa.

Dr. Rea Parker,

Smithfield, has been elected chairman of the School Board of Isle of Wight County, succeeding the late Dr. R. Lee Seward.

The Neuropsychiatric Society of Virginia,

At a meeting in Charlottesville on January 26, elected the following officers: Dr. Frank H. Redwood, Norfolk, president; Dr. H. C. Henry, Petersburg, vice president; and Dr. Thomas N. Spessard, Roanoke, secretary-treasurer.

Dr. J. M. Gouldin,

Tappahannock, was elected president of the Essex-King and Queen National Farm Loan Association at its annual meeting in February.

Dr. John Hundley, Jr.,

Was recently elected president of the Lynchburg Kiwanis Club for the ensuing year.

Dr. Wright Clarkson,

Petersburg, by invitation recently addressed the Woman's Club of Westmoreland County on the subject of "Cancer Control," and showed numerous lantern slides in connection with his talk.

Dr. Mary Harley,

Who was resident physician and professor of hygiene at Sweet Briar College from 1906 to June, 1936, retired at that time and has since been devoting her time to travel and the study of anthropology. She has studied at the Universities of Hawaii and Pennsylvania and is now at the University of Virginia. Later she expects to continue her studies at Oxford, England, and at the University of Pretoria in South Africa.

The American Board of Ophthalmology

Announces that in 1938 it will hold examinations in

San Francisco, June 13, during the American Medical Association.

Washington, D. C., October 8, during the American Academy of O. and O. L.

Oklahoma City, November 14, during the Southern Medical Association.

Applications should be filed immediately and the required number of case reports must be filed at least sixty days prior to date of examination. Application blanks may be obtained from Dr. John Green, 3720 Washington Avenue, St. Louis, Mo.

The American Board of Ophthalmology has established a Preparatory Group of prospective candidates for its certificate, the purpose of which is to furnish such information and advice to physicians who are studying or about to study ophthalmology as may render them acceptable for examination and certification after they have fulfilled the necessary requirements. Any graduate or undergraduate of an approved medical school may make application for membership in this group. Upon acceptance of the application, information will be sent concerning the ethical and educational requirements, and advice to members of the group will be available through preceptors who are members or associates of the board. Members of the group will be required to submit annually a summarized record of their activities.

Up to the end of 1937, the board has held fifty-six examinations and had certified 1,498 ophthalmologists.

The Richmond Tuberculosis Association

And the Camp Harrison Auxiliary held their annual meeting on February 1 in the Richmond Academy of Medicine Building. Dr. P. P. McCain, superintendent and medical director of the North Carolina Sanatoria and director of extension service for that State, was the guest speaker, his subject being "The Control of Tuberculosis Through Modern Scientific Methods."

Mr. Tennant Bryan was re-elected as president of the Association, and Drs. P. D. Lipscomb and Kinloch Nelson as two of the vice-presidents.

The Southside Virginia Medical Association

Will hold its next quarterly meeting in Franklin on Tuesday, March 15, at which time an interesting program will be presented. Dr. W. J. Ozlin of South

Hill is president and Dr. R. L. Raiford of Franklin, secretary-treasurer.

The Tri-State Medical Association of the Carolinas and Virginia

Had an excellent meeting in Asheville, N. C., February 21 and 22, under the presidency of Dr. Howard R. Masters of Richmond. At its closing session, Dr. J. F. Highsmith of Fayetteville, N. C., succeeded to the presidency, and Dr. A. E. Baker of Charleston, S. C., was named president-elect. Dr. J. M. Northington of Charlotte, N. C., was re-elected secretary-treasurer, and the following were elected vice-presidents: Dr. Wright Clarkson of Petersburg; Dr. W. L. Pressly of Due West, S. C.; and Dr. Charles A. Tinsley of Asheville, N. C. It was decided to hold the 1939 meeting in Charleston, S. C.

Physician Wanted.

Excellent opening in Southside Virginia for sober industrious physician. Practice established forty-two years. For special inducement, apply to "Drug Store", care the *Monthly*. (*Adv.*)

For Sale—

Burdick Quartz Mercury Lamp. Condition guaranteed. Address "Mercury," care VIRGINIA MEDICAL MONTHLY, 1200 East Clay Street, Richmond. (*Adv.*)

Wanted—

A good second hand instrument cabinet, medium or small size. At moderate price. Address "J. W.," care this journal. (*Adv.*)

Obituary Record

Dr. Robert Lee Seward,

Prominent physician of Isle of Wight, Va., died at his home in that place on January 31. He was a native of Surry County and seventy-five years of age. Dr. Seward received his medical education at the University of Maryland, from which he graduated in 1891. Shortly thereafter, he located at Isle of Wight Courthouse where he had continued in practice to the time of his death, and had been a member of the Medical Society of Virginia since the same year. In addition to his interest in medical affairs,

Dr. Seward took an active part in the religious and civic affairs of his community. His wife and three sons, one of them Dr. Blanton P. Seward of Roanoke, survive him. Dr. W. W. Seward of Surry is one of his brothers.

Dr. Robert Rush Goad,

Well-known physician of Hillsville, died suddenly on January 27, death being due to coronary thrombosis. He was fifty-three years of age and graduated from the former University College of Medicine in Richmond in 1911. He began practice at South Hill but moved to Hillsville in 1912, where he had since taken an active part in civic and fraternal affairs as well as in his profession. Dr. Goad took post-graduate work at Tulane University in 1928 and 1930. He was a member of the American and Southern Medical Associations, as well as the State, Southwestern Virginia, and Carroll-Grayson County Medical Societies. His wife and two daughters survive him.

Rear Admiral Cary Travers Grayson,

M. C., U. S., retired, Washington, D. C., died February 15, death being due to anemia complicated with a respiratory infection. He was a native of Culpeper County, Va., and fifty-nine years of age. Dr. Grayson attended the Medical College of Virginia in Richmond and the University of the South at Sewanee, Tenn., graduating from the latter in 1903. He also graduated from the Naval Medical School. Dr. Grayson was widely known as Woodrow Wilson's personal physician, and served for several terms on the medical staff of the White House. He had taken a very active part in the political life of Washington. Dr. Grayson was president of the Gorgas Institute and chairman of the American Red Cross. His wife and three sons survive him.

Dr. Harvey Shepherd Thatcher,

Head of the Department of Pathology of the University of Arkansas Medical School, died January 20, at the age of fifty-two. Death was due to accidental sulphuric acid poisoning, it being believed that he had been drawing acid through a pipette, conducting an experiment at the school, and had strangled and swallowed a quantity of it. Dr. Thatcher was widely known for his work in pathology and bacteriology and was director of the Medical School's cancer clinic. He was professor of pathology at the Medical College of Virginia in 1920-21.

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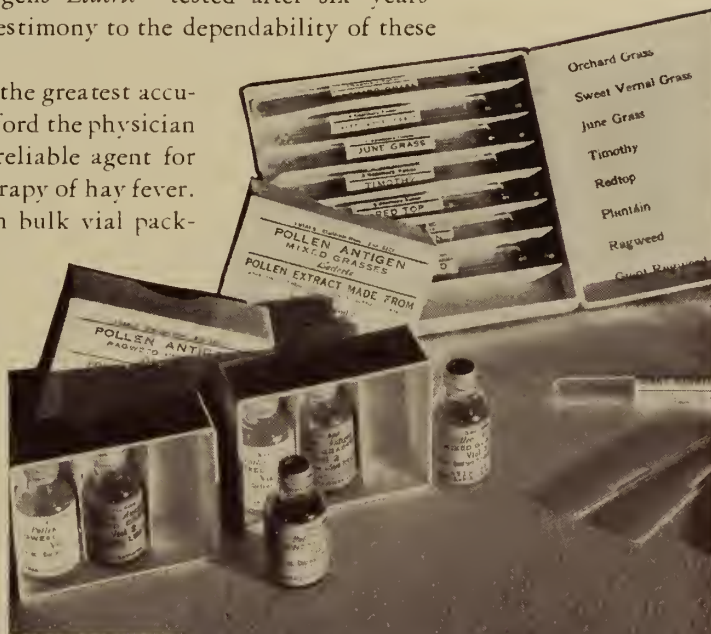
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OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

69th Annual Meeting, Medical Society of Virginia, Danville, October 4-6, 1938

Vol. 65, No. 4
WHOLE No. 1030

RICHMOND, VA., APRIL, 1938

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Virginia Medical Monthly

Official Publication of the Medical Society of Virginia

Vol. 65, No. 4
WHOLE No. 1030

RICHMOND, VA., APRIL, 1938

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ADVANCES IN THE TREATMENT OF PELVIC INFLAMMATION.*

CHARLES R. ROBINS, M. D.,

Professor of Gynecology, Medical College of Virginia; Surgeon, Stuart Circle Hospital,
Richmond, Virginia.

Pelvic inflammatory disease in the female occupies a very prominent position in gynecology, not only on account of the frequency of its occurrence, but also on account of the permanent damage to the pelvic contents which necessarily supervenes in a high percentage of cases.

It is estimated that about 75 per cent of such cases are due to gonorrhea, the remainder being principally due to infections following abortion and labor at term.

There is usually a very marked difference in symptomatology and nature of these two infections. Gonorrhea extends by the route of the mucous membranes. It rarely causes high temperature or pulse rate or marked leucocytosis and may in a sense be regarded as a local inflammation. Where the inflammation is due to puerperal infections, however, the extension is principally by the lymph channels and produces a cellulitis and extension into the pelvic cavity by that route. It is attended, as a rule, by high fever and pulse rate and by a marked leucocytosis and, on account of its absorption, should be classed as a septicemia.

Not all the cases of pelvic inflammation following abortion or labor at term are, however, due to septic infection. This is a very favorable time for a gonorrheal infection in the lower genital tract, particularly when the infection involves the cervix, to ascend, due to the open condition of the uterus. However, the symptoms usually indicate the difference in the type of infection.

One of the most interesting developments in the study of gonorrheal infections is the question of chronicity, and the location of the infecting focus. It was for a long time the opinion of gynecologists that the focus of infection remained in the tube that

has been once infected and that the recurring attacks were due to a lighting up of this latent infection. The studies of A. H. Curtis,¹ carried out over a period of years, changed this conception. Tubes that were removed were ground up and subjected to a thorough laboratory examination. Based on the result of these investigations, he makes the unqualified statement that in all of his experience he has never isolated the gonococcus from the secretions of patients who either failed to reveal gross evidence of active inflammation or who had been free from fever for a minimum of ten days. In his opinion, which has been generally accepted, the recrudescence was due to reinfection, either from intercourse or from ascent from foci of infection in the lower genital tract. There are here three points which are commonly infected and in which the infection may remain indefinitely until eradicated—Skenes glands, the cervical glands, and Bartholins glands. The acceptance of this fact has a marked bearing on the treatment of this disease.

On the other hand, puerperal infections are of a septic nature and the infection may persist for a long period of time in the pelvic tissues. Operation during the acute stage, except for the drainage of abscesses, is attended by such a high mortality as to be prohibitive, and this danger often persists for many months, sometimes for years.

Based on these observations, the treatment of pelvic inflammation, both of the acute and chronic forms, has undergone a marked change. In my earliest experiences in gynecology the inflamed pelvis, both acute and chronic, was operated when diagnosed. The conception was expressed by Dr. Joseph Price as a "puddle of pus", and in order to save the patient from dire consequences immediate operation was undertaken. No attempt was made to differentiate the type of infection. It is needless

*Read before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, Va., October 12-14, 1937.

to say that the operations were radical, frequently involving the removal of all of the pelvic organs and were complicated by free drainage of various sorts. It is also needless to say that the mortality was high some of the hospitals reporting a mortality of 25 per cent. However, those that got well were regarded as saved. Following in the wake of this operative onslaught a disconcerting fact was observed in that hard-headed women who refused operation got well also.

In a paper written by me³ in 1907, based on a growing experience, I made the following points:

"The rules that apply to acute appendicitis and other abdominal conditions do not apply to pelvic inflammation.

"A sharp distinction should be made between acute and chronic cases. The only operation indicated in acute cases is the evacuation of abscesses.

"An operation performed in the acute stage must be radical, so that even in those cases which recover, the patient still has to suffer from the effects of an artificial menopause.

"In a large number of cases, complete resolution will take place under proper treatment, even though there may be a very marked inflammatory mass in the pelvis. As recovery is often complete and permanent without operation, in these cases an operation would have been unnecessary. It is not easy to determine when this satisfactory termination will take place, but it is certainly advisable to give all cases a chance. The question of operation can be determined later.

"Under proper treatment a fatal termination in an unoperated pelvic inflammation is of very infrequent occurrence.

"The treatment advocated was: Absolute rest in bed in the Fowler position, food restricted to the lightest and most easily digested diet, withdrawal of all food where there is peritoneal involvement but the ingestion of large quantities of hot water, proctoclysis by the Murphy drip, copious hot vaginal douches.

"As a rule, we find that the fever rapidly subsides and the inflamed tissues begin to undergo resolution.

"Where symptoms persist after the acute stage has passed and the patient has attained all the improvement she is likely to receive, operation is advised. This consists principally of separation of adhesions, removal of the tubes and suspension of the uterus

with catgut. This last is done to prevent the uterus dropping back in the inflamed area behind the uterus. After the catgut is absorbed the uterus regains its mobility."

The tubes were removed because they were considered the focus of infection and the potential cause of subsequent attacks of inflammation. It was believed that after the pathological tubes were removed that the other evidences of inflammation would undergo resolution. This seemed to be the case and such patients made a good symptomatic recovery in a very satisfactory percentage of cases and remained well, although they were sterile. This was considered an advantage over more radical operations because the patient retained the organs essential to menstruation and the endocrine balance, although they were sterile.

These views expressed at that time evidently accorded with the views of other gynecologists of experience. C. Jeff Miller,² in a recent textbook, writes: "The treatment of tubal disease was formerly strictly surgical; operation was done routinely as soon as the diagnosis was made, and ablation of the entire genital tract was usually the procedure employed. The result was not only a group of thoroughly unsexed women, at least in the anatomic and physiological sense, but also a death rate of approximately 20 per cent."

In 1909 (two years after my paper), F. F. Simpson⁴ read before the American Gynecological Society a paper which revolutionized the treatment of pelvic inflammation. In it he set forth a mode of therapy hitherto unheard of. Instead of the old plan of immediate surgery he advocated a new plan of expectant treatment, and he proposed that surgery be postponed until the temperature had been consistently normal for at least three weeks, even after repeated bimanual examination and until there had been a complete absorption of the inflammatory exudate surrounding the primary focus of infection. He reported a series of 456 cases with a mortality of 1 per cent, in contrast to the 20 per cent, which was the average death rate for the older method of immediate operation. This added what was called the cooling process, which was more or less generally adopted. In our operative Clinic at the Medical College of Virginia deaths were so infrequent that several years would go by without one.

In 1921, A. H. Curtis¹ published his researches in reference to the viability of the gonococcus, already

referred to, which established the fact the gonococcus continues only a short while as an infecting organism in the tube and that it was no longer thought to be necessary to remove the tubes because of their being a focus for re-infection.

The expectant treatment in acute cases consisted of complete rest in bed, applications to the lower abdomen of either heat or cold, and the application of heat to the pelvic organs by copious hot douches. In addition various other treatments were advocated and used, particularly foreign proteins and vaccines. Abscesses, when they occurred, were drained.

It is interesting to note that heat has always been regarded as a valuable means of combating inflammation. In 1879, T. A. Emmet advocated the hot douche and gave specific directions as to its use. Unfortunately these directions have not been followed always, and the douche has fallen to some extent in disrepute. Where properly administered it is still a valuable treatment for pelvic inflammation. It is not the douche powder but the heat that accomplishes the result.

With the advent of diathermy a more direct method of applying heat to the pelvis has been found. Still more recently the Elliott treatment was introduced. This latter consists of introducing a properly fitting rubber bag in the vagina through which hot water with a controllable temperature is driven by a pump. The bag becomes distended by the water, distends the vagina and comes into close approximation to the pelvic organs. By this means the temperature in the pelvis can be raised to a point that is lethal to the gonococci.

We have found at Stuart Circle Hospital, where these treatments have been in use for some years, that the benefits of these treatments have been striking. Ordinarily for acute cases, especially of gonorrhea, the best results are secured by the Elliott treatment. In chronic cases two forms of diathermy are used, the old form where one electrode is introduced through the vagina and the circuit completed by a pad on the back or abdomen, and the short wave where the heat is generated in the tissues by placing one pad on the lower abdomen and one on the back. The results have been so excellent that operations for pelvic inflammatory conditions have been largely superseded. During the year 1936 approximately 967 treatments were given for pelvic inflammation to approximately ninety-five patients. Of these, 567 Elliott treatments were given for acute pelvic inflam-

mation to fifty-five patients. The other 400 treatments were given for chronic inflammation, about evenly divided between the two diathermy methods. These last figures are approximate because of the fact that this treatment was given for other conditions also and no exact account was kept of which diagnoses were covered.

It must not be understood that no operations are done for cases of pelvic inflammation, but such operations are for the permanent results of the inflammation and for other complicating conditions after the inflammation has been cured.

Operation will doubtless be indicated in many of the cases occurring in irresponsible and uncontrollable patients where cooperation cannot be secured. In the higher types, however, where cooperation is given, the results in acute cases with the Elliott treatment are most satisfactory and in many cases brilliant.

As a type of what can be done I will report only one case, because a subsequent appendicitis afforded the opportunity for a visual inspection.

The patient was a young girl who unfortunately contracted gonorrhea. When she was presented for treatment the pelvic examination revealed a fixed uterus and large adherent tubal masses. She had a temperature averaging around 101°F. She was kept quietly in bed and given Elliott treatments. She rapidly improved and before she left the hospital her uterus had become freely movable and the masses had disappeared. She reported at intervals and it was found that there was an erosion and a persistent but scanty purulent discharge from the cervix. This was cured by an electrical cauterization. Subsequently her tubes were tested by the Rubin test and found to be patulous. A year following her original admittance she was operated on at Stuart Circle Hospital for appendicitis. This afforded an opportunity for inspection of the pelvis which showed that the only evidence of the pelvic inflammation was one adhesion between the right tube and the appendix. This was divided. The patient was perfectly cured from a condition that a few years back would have resulted at least in the loss of the tubes with a consequent sterility.

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DISCUSSION

DR. C. J. ANDREWS, Norfolk: Dr. Robins has presented a very valuable story of the treatment of pelvic inflammation. His reference to the history of the condition is most interesting. The conservative methods are now generally agreed upon in principle but cannot be over-emphasized and no doubt need re-stating from time to time.

Pelvic inflammation is still a dangerous and disabling disease. Operation in the acute stage may be highly disastrous, and particularly is this true if the inflammation follows criminal abortion or attempted abortion.

The Elliot treatment is a product of recent years. My own experience with it has extended over about three years and has been limited largely to private patients. The results have been most spectacular in the treatment of acute gonorrhea. Since sulfanilamide has become popular I have used this in conjunction with it with gratifying results in a few cases.

Many of the acute pelvic conditions are so completely relieved that no operative procedure is ever needed, but in some a chronic condition will ensue with minor recurrences which eventually require operative measures, but even in these the operation will be less extensive and the result more satisfactory.

Unfortunately, it is still necessary to make a diagnosis in these conditions. The Elliot treatment will not be helpful in ectopic pregnancy, acute appendicitis, endometriosis and various other pelvic conditions. There is, however, a class which may be grouped under pelvic pain due to chronic inflammation which are often very satisfactorily relieved by the use of this method.

DR. RANDOLPH H. HOGE, Richmond: I just want to say that the experience on the wards of the Medical College of Virginia has been in accordance with what Drs. Robins and Andrews have said. We have had a large number of cases of pelvic infection. In recent years there has been a considerable decrease in the number of cases operated upon, this decrease being due to conservative therapy. We have been using the Elliott treatment for the past two years, and believe that this has contributed to the decrease in the number of operations.

DR. S. B. MOORE, Alexandria: I enjoyed Dr. Robins paper on pelvic inflammation. I think that is a subject that should be studied deeply.

The mortality rate can be greatly reduced by watchful waiting and more conservative treatment. Never operate until the temperature returns to normal.

Diathermy has been a great aid in my hands, and many cases where the involvement is not too great operation will not be necessary.

A few years back, we removed tubes in all of our cases, whereas today we are more conservative, with the aid of diathermy or other method of heat treatment. Today we cool down a severe pelvic inflammation, and make the patient fairly comfortable. However, I admit many cases do better by removal of the tubes, but not the ovaries.

Some men today are going through the culdesac, splitting the tubes and letting them drain; in a year or two they are practically normal, and some of them function normally.

In closing, I wish to state that diathermy and conservative methods have opened up a new field to make unfortunate females more comfortable.

DR. ROBINS, closing the discussion: I appreciate very much the discussion of my paper. I was prompted to write it because I had personally had experience with the various methods of treatment referred to and I could therefore appreciate the tremendous improvement that has been made in the treatment of pelvic inflammation. I thank Dr. Andrews, Dr. Hoge and Dr. Moore for their thorough discussion and am glad that their experiences coincide with mine.

EARLY RECOGNITION AND MANAGEMENT OF NEUROSYPHILIS.*

JAMES KING, M. D.,
Radford, Virginia.

The diagnosis of late neurosyphilis is a relatively easy task. The detection of an early invasion of the nervous system by the spirochaeta pallidum often taxes one's diagnostic acumen.

As our work deals primarily with mental patients, we are constantly on the alert for neurosyphilis. Even so, at times we find ourselves in the midst of a laboratory diagnosis. The protean character of the disease here, as elsewhere, often prohibits a definite conclusion from the symptoms and signs

*Read before the Southwestern Virginia Medical Society, at Mountain Lake, Va., September 3, 1937, as part of a Symposium on Syphilis.

alone. In such cases physical, neurological and mental findings will not justify a diagnosis of neurosyphilis and the laboratory must be relied upon. However, there are certain key symptoms and signs which lead to further investigation and the proper conclusion. This general symptomatology is reviewed with no suggestion of originality on the part of the writer.

TABLE 1.

THE IMPORTANT SYMPTOMS OF NEUROSYPHILIS
(after Stokes)

| | |
|--------------------------------|-------------------------|
| Headache | Pupillary signs |
| Lightning pains | Seizures or convulsions |
| Paresthesias | Speech disorders |
| Disturbance of bladder control | Cerebral neurasthenia |
| Ocular symptoms | Delusions |
| | Character change |
| | "conduct slump" |

Headache.—This may vary from a diffuse, moderate and persistent pain to the severe boring and blinding pain of brain tumor, with projectile vomiting.

Lightning Pains and paresthesias are extremely early symptoms. The typical lightning pain is sharp, stabbing, spot-like and may recur again and again in the same place. It often singles out a spot such as the heel or the instep for repeated shocks.

Paresthesias.—These may consist of fleeting attacks of numbness, tingling, prickling, constriction, sensations of cold or heat; shifting from point to point or involving an entire limb or side of the body.

Disturbances of Bladder Control and of Sexual Reflexes are coming into recognition as important early signs of lower cord changes and as among the first warnings of tabetic neurosyphilis in particular. The onset may be entirely insidious and the patient may be unaware of the gradually developing atony of the bladder musculature from paralysis due to impairment of its innervation. Cystoscopic examination is a valuable aid in the diagnosis.

Ocular Symptoms and Signs are dependent in the early years on meningeal lesions. The ptosis, diplopia and strabismus are parts of the general group of cranial nerve syndromes. The Argyll-Robertson pupil is practically pathognomonic of neurosyphilis. Even before the loss of the direct light reflex, as Sadler points out, the consensual light reflex may disappear. This consists in the

dilatation or contraction of the pupil of one eye when the other eye is shaded or exposed to direct light.

The Seizure or Convulsive Attack is one of the common symptoms of paretic neurosyphilis. Any paralytic stroke occurring in a patient under forty years of age should be regarded as highly suspicious of a luetic infection (J. C. K.). In one such case which we recently saw, the blood Wassermann was consistently negative while the spinal fluid showed a strongly positive reaction.

Speech Disorders are most commonly seen in the paretic. The dysarthria is accentuated by test phrases, such as "Methodist Episcopal"; "Truly Rural". One may also encounter aphasia in neurosyphilis.

Cerebral Neurasthenia.—Nonne states that a "neurasthenic with syphilis in his history suggests a paretic". Since the symptoms of neurasthenia so closely resemble, in many cases, the early signs of paresis it is obvious that blood and spinal fluid Wassermann should be done on all such nervous cases with a luetic history.

Delusions, Character Change and the term "conduct slump" may precede by months and even years the appearance of gross symptoms of cerebral or paretic neurosyphilis. In 50 per cent of the cases in our series, a change in personality was the outstanding feature. Delusions of grandiose content are, of course, easily detected as a part of paresis. Delusions of a depressed nature do not always arouse the suspicion of the examiner, since they occur so frequently in other psychoses. Delusions of one form or another were outstanding in five of the thirteen cases here presented. In only two of the cases were there lacking mental changes. Since these patients were all referred, however, the incidence of mental signs is unusually high.

TABLE 2.

EARLY SIGNS OF NEUROSYPHILIS

1. Fixed or relapsing positive blood Wassermann.
2. Spinal fluid findings: cell count, Wassermann positive.
3. Pupillary changes: irregularity, slow to light.
4. Disturbed reflexes.
5. Cranial nerve lesions: ocular and facial palsies.
6. Early sensory changes: decrease in pain, loss of bone and muscle-joint sense.
7. Personality change.

Fixed or Relapsing Positive Blood Wassermann:

Stokes states that 30 per cent of these cases have or develop neurosyphilis. Therefore, a careful search for neurological changes and spinal fluid examination is evident.

Spinal Fluid Findings: The Wassermann reaction is positive in practically 100 per cent of paretics. But in tabes we find only 70 per cent with positive blood and spinal fluid. Most of the cases of tabes, however, have a positive reaction with 1 cc. of fluid. Cell increase in the spinal fluid is a very early objective finding, since it depends on meningeal reaction which is one of the earliest forms of pathological change in the neurosyphilitic process. It warns of trouble, actual or pending.

Pupillary Change: A typical Argyll-Robertson pupil is an end-result. One should test the pupils for a relative poverty to light response, which, with a good reaction to accommodation, indicates pupillary changes very significant to this condition.

Disturbed Reflexes: Some inequality; accentuation or decrease in the deep reflexes is a very common finding of neurosyphilis.

Cranial Nerve Lesions most frequently produce changes in the eighth nerve with nystagmus or deafness; in the seventh nerve with facial palsy; in the second, or optic nerve, with disturbance in vision, and in the fifth with sensory changes over the face or cornea. If the syphilis strikes the third, fourth or sixth nerves, diplopia or some other form of oculomotor aberration results.

Early Sensory Changes: The patient should be carefully tested for "islands" of analgesia which may not be larger than a palm's breadth. Changes in vibratory sense, loss of sense of motion or position are very early objective signs.

Personality Change occurs in paresis and is here very important. As the term indicates, the person changes in his behavior or conduct to a marked degree. He becomes careless about his dress, neglects his business or makes faulty financial ventures. He may plunge heavily in a business enterprise, or the change may occur along moral lines with various sexual episodes. The memory, particularly for recent events, becomes faulty, the intelligence is lowered and the judgment becomes defective. These changes usually occur before his friends and family realize the situation and depletion of the exchequer is a very common "objective finding".

TREATMENT OF NEUROSYPHILIS

Since there are some fifteen clinical varieties of neurosyphilis, it is obvious that no fixed scheme of treatment is possible. Individualization of the therapy is necessary. The physician will employ neo-arsphenamine, bismuth, mercury and the iodides to good advantage in all cases, both as a preparatory and after-treatment to fever therapy.

Of the arsenicals having specific penetration for the central nervous system, tryparsamide is the only drug at present known that will pass the choroid plexus. It is a slow acting drug, requiring treatment for a period of one or two years. But it permits ambulatory treatment. Tryparsamide produces severe damage to the optic nerve in 9.2 per cent of the cases and for this reason the visual fields must be checked every week for the first six doses. Recently, we have used this arsenical in conjunction with fever therapy, giving the injection at the height of the fever curve. Since the vascular system is widened during this period, added penetration should be possible. No conclusions have been made thus far.

Our results with artificial fever in neurosyphilis, particularly in paresis, have been so encouraging that this method is preferred, wherever the patient's condition warrants the therapy.

TABLE 3.

CLINICAL RESUMÉ—CASE MRS. F. W.

Age: fifty. Occupation: Housewife. Infected: five years.

Signs.—Severe agitated mental depression.

Diagnosis.—Paresis, depressed type.

Treatment.—Seven fever sessions.

Results.—Recovered.

SEROLOGY

| | Before Fever | After Fever |
|-------------------------|--------------|-------------|
| Blood Wassermann ----- | 4 plus | 4 plus |
| Spinal Wassermann ----- | 4 plus | Negative |
| Cells ----- | 20 | 6 |
| Colloidal gold ----- | 555555322 | 5554421000 |
| Globulin ----- | 3 plus | 1 plus |

Comment.—This patient suffered a severe mental breakdown. Ideas of self-accusation, loss of insight and judgment, insomnia, "nervousness" and indigestion. Physical negative. Neurological: Argyll-Robertson pupils. A very stormy course for several weeks, with deepening depression and finally into a "vegetative existence". During fever sessions patient returned to her normal mental state but relapsed after

fever subsided. At end of seventh fever was able to go home. Should have received additional fever but has been carefully watched for thirteen months. Patient is completely well except for persistent positive blood Wassermann. After-treatment: Mar-pharsan (Tryparsamide produced disturbance in vision).

TABLE 4.
CLINICAL RESUMÉ—MR. J. R. T.

Age: fifty-seven. Occupation: Farmer. Infected: ?.

Signs.—Depression, loss of weight, insomnia, change in personality, loss bladder control . . . absent knee jerks, involuntary urination.

Diagnosis.—Tabo-paresis, cord bladder.

Treatment.—Ten fever sessions.

Results.—No improvement; patient died two months later.

| SEROLOGY | | |
|-------------------------|--------------|-------------|
| | Before Fever | After Fever |
| Blood Wassermann ----- | 4 plus | 4 plus |
| Spinal Wassermann ----- | 4 plus | 4 plus |
| Cells ----- | 46 | 24 |
| Colloidal gold ----- | 5554332110 | ? |
| Globulin ----- | 1 plus | 1 plus |

Comment.—This case represents a severe case of neurosyphilis. First showed increased psychomotor activity which was followed by marked depression. Rich delusional content of a fearful nature. Family noted a marked change in personality several months prior to admission. Suffered lightning pains in lower legs and gradually lost bladder control. Patient was unconscious of constant dribbling. Physical: negative. Neurological: decreased hearing bilateral pallor of optic nerve and facial asymetry, absent knee jerks. No ataxia. Mentally, markedly deteriorated. Received three fever sessions elsewhere. Temperature maintained above 103.5 degrees for seventy-seven hours and above 105.8 for forty-five hours during ten fever sessions. Patient received added benefit of chemotherapy but signs progressed with marked rapidity and he died at home two months later.

TABLE 5.
CLINICAL RESUMÉ—MR. H. Z. S.

Age: twenty-seven. Occupation: Meat-cutter. Infected: 1928.

Signs.—Disease began May, 1935. Seclusive, mute, disoriented, depressed, suicidal, violent, loss of thirty-five pounds in weight.

Diagnosis.—Paresis, mixed type.

Treatment.—Ten fever sessions.

Results.—Remission. Patient at work on full-time basis.

| SEROLOGY | | |
|-------------------------|--------------|-------------|
| | Before Fever | After Fever |
| Blood Wassermann ----- | 4 plus | 4 plus |
| Spinal Wassermann ----- | 4 plus | Negative |
| Cell count ----- | 49 | 6 |
| Colloidal gold ----- | 5555442000 | 0000000000 |
| Globulin ----- | 3 plus | Normal |

Comment.—This patient was seen by us first in June, 1935. Mental condition consisted of above signs, which were marked in character. Patient very violent at times. With first fever session, psychosis showed marked change to elated state. With each fever session, condition improved. In two weeks patient allowed out of door privileges. Received eighty hours above 103.5 and fifty hours above 105.8. Patient has been at work steadily since November, 1935. Case has been followed closely since that time and is in full remission after two years.

TABLE 6.
CLINICAL RESUMÉ—MRS. E. P.

Age: forty-four. Occupation: Housewife. Infected: 1927.

Signs.—"Nervousness"; loss of interest in home; markedly depressed; lack of insight; loss of judgment; loss body weight.

Diagnosis.—Paresis, depressed type.

Treatment.—Eight fever sessions.

Results.—Remission. Patient at home working. Gained thirty-five pounds.

| SEROLOGY | | |
|-------------------------|--------------|-------------|
| | Before Fever | After Fever |
| Blood Wassermann ----- | 4 plus | Negative |
| Spinal Wassermann ----- | 4 plus | Negative |
| Cell count ----- | 60 | 4 |
| Colloidal gold ----- | 5555555210 | 55555553100 |
| Globulin ----- | 3 plus | 1 plus |

Comment.—This patient was markedly depressed and disorganized. Case treated February, 1935. Physical: mal-nutrition. Neurological: contracted fields of vision. Patient showed excitement when fever produced. Received fifty-five hours above 103.5 and twenty-five hours above 105.8. Improved with each session and was discharged July, 1935. Has been closely followed for past two years and continues in remission. Husband had paresis also and was treated by us but did not pass into remission.

TABLE 7.

CLINICAL RESUMÉ—MR. R. W. M.

Age: thirty-two. Occupation: Salesman. Infected: 1922.

Signs.—Depression; introspection; paresthesias, "nervousness".

Diagnosis.—Paresis, depressed type.

Treatment.—Ten fever sessions.

Results.—Remission; patient at home; now asymptomatic.

SEROLOGY

| | Before Fever | After Fever |
|-------------------|--------------|-------------|
| Blood Wassermann | 4 plus | Negative |
| Spinal Wassermann | 4 plus | Negative |
| Cell count | 23 | 6 |
| Colloidal gold | 4433332110 | 1111110000 |
| Globulin | Negative | Negative |

Comment.—This patient treated latter part 1934. Signs were not striking at time but worried constantly over his condition. Received Swift-Ellis treatment prior to admission. Physical: negative. Neurological: negative. Received ten fever sessions with seventy-five hours above 103.5 and twenty-four hours above 105.8. Was discharged in April, 1935, and has been recently checked. Continues in clinical and laboratory remission after three years.

TABLE 8.

RESULTS OF CASES TREATED WITH ARTIFICIAL FEVER

| Case | Diagnosis | Remission | Improved | Unimproved | Died |
|-------------|-------------------------------|-----------|----------|------------|------|
| H.Z.L.: | Paresis— (dementing) | | x | | |
| W.L.J.: | Paresis— (dementing) | | x | | |
| C.E.S.: | Tabes— | | x | | |
| R.K.P.: | Paresis— (dementing) | | x | | |
| S.D.H.: | Paresis— (dementing) | | | | x |
| R.P.: | Paresis— (dementing) | | | | x |
| F.P.: | Asymptomatic Neurosyphilis | | x | | |
| R.H.L.: | Tabo-paresis | | x | | |
| E.P.: | Paresis— (depressed) | x | | | |
| J.R.T.: | Paresis— (dementing) | | | | x |
| H.Z.S.: | Paresis— (mixed) | x | | | |
| F.W.: | Paresis— (depressed) | x | | | |
| R.W.M.: | Paresis— (depressed) | x | | | |
| Percentages | | 35% | 43% | 21% | 0 |

H. Z. L.—Treatment was begun on this case in January of 1932. He was a dementing form of paresis and received thirty fever sessions which evidently arrested the disease. However, there had occurred sufficient parenchymatous destruction to prevent a full recovery. The patient has been at home during the past four and one-half years and has done a little work. It is interesting to know that his serology, both blood and spinal fluid, remained consistently positive until recent tests produced negative results with a change in the colloidal gold curve from a paretic type to zero.

W. L. J.—This patient was seen by us in June, 1935. His illness began with an hemiplegia during the night a few days prior to admission. The paralysis partly subsided, later, almost entirely. The blood Wassermann was negative, the spinal fluid strongly positive. He received six sessions of fever. We have been unsuccessful in getting him in for a check-up but in a recent interview on the street, he reported good health and has suffered no further progression of his disease. Classed as improved.

C. E. S.—Was treated in September, 1936. The diagnosis was moderately advanced tabes with lightning pains and ataxia as outstanding symptoms. He received ten fever sessions, with a marked improvement in general health and relief from pain. The patient's temperature was accidentally carried to 108.5 without untoward effects. Classed as improved.

R. K. P.—This patient is still under treatment. His condition has shown marked improvement after eleven fever sessions.

S. D. H.—This man, a dementing paretic, is still under treatment. He represents a moderately advanced case with some disturbance in gait. He is reported as unimproved at this time.

R. P.—Was treated by us in February of 1935. He showed marked mental dalapidation. Fever was inadequate because of unfavorable reactions but the patient has been at home and at work at a lower position for the past two years. He is classed as unimproved.

F. P.—This man had a history of lues contracted five years before we saw him in November, 1936. He had a positive spinal fluid with paresthesias over the lower legs. Ten fever sessions were given and the Wassermann was reversed and the paresthesias alleviated. He is classed as improved.

R. H. L.—Was treated by us in July, 1933. He showed marked mental defects accompanying a well-

advanced expansive paresis. The lower deep reflexes were absent and there was marked disturbance to the gait. He was given six fever episodes, declining further treatment. He returned to his home and resumed work at his trade in a few months. We have been unable to get him in for a check-up, but there has been no relapse of symptoms. He is classed as improved. The remaining cases shown on Table eight have been reviewed in Tables three through seven. The results in the thirteen cases here presented are as follows:

| | |
|------------------|-----|
| Remissions ----- | 35% |
| Improved ----- | 43% |
| Unimproved ----- | 21% |

These estimations have been arrived at from a very critical standpoint. One of the cases is at

home and at work is classified as unimproved since there was not a great change made in his psychosis. Five are given the improved status, although they have been relieved of their out-standing symptoms. All are at home and some of them at work. Further time will be required to properly evaluate the end-results.

The four cases in remission have been well for an average period of two years. They have been closely followed and none show evidence of clinical relapse.

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STONE IN THE URINARY TRACT: PRESENT CONCEPTS OF ETIOLOGY AND PREVENTIVE THERAPY AGAINST RECURRENCE.*

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Scientific approach to a better understanding of the pathogenesis of urinary calculi received impetus in 1917 when Osborne, Mendel and Ferry noted a high incidence of concrement formation in rats fed on a diet deficient in vitamin A. Since that time the experimental production of urinary stone has been accomplished by numerous investigators with such widely different methods as to lead to difficulty in evaluating their significance.

HYPEREXCRETION CALCULOSIS

From the chemist we learn that water insoluble constituents of stone are held in solution by irreversible protective colloids, and, further, that their solubility varies with the hydrogen ion range of the urine.

The first experimental calculi in animals were produced by Ebstein and Nicolaier in 1893 by feeding oxamide. In 1920-21, I traced the histogenesis of oxamide calculosis, paying attention to the crystalline morphology and to the content in urinary pigment.

It was found that small doses of oxamide caused

a deposition of an isolated cross type of crystal, whereas large doses resulted in profuse hyperexcretion of pigmented stone forming spherular crystals.

The production of artificial calcium oxalate stone by the hyperexcretion mechanism was next achieved by injecting subcutaneously N-butyl oxalate and calcium chloride in chemically equivalent amounts. In tracing the histogenesis of such calculi from urinary sediments and crushed stones, we found the concrement forming crystal again to be made up of a spheroidal crystalline form which agglutinated together to form stone.

Hyperexcretion calculosis may be explained by the inability of the urinary protective colloids to maintain solution of the excessive crystalloid material present or to deposit it as single discrete crystals.

Clinically, the evidence for hyperexcretory calculosis is abundant. Phosphaturia, oxaluria and uratic showers in gouty disease are known to be frequently associated with stone. Cystin calculi occur with the excessive appearance of an abnormal crystalloid in the urinary tract.

The high incidence of calcium phosphate calculi associated with hyperparathyroidism is especially illuminating. Here we have an excessive parathy-

*Read before the sixty-seventh annual session of the Medical Society of Virginia, at Staunton, Va., October 13-15, 1936. Re-edited and submitted for publication February, 1938.

roid secretion, with consequent hypercalcemia, hypophosphatemia, hypercalcinuria and hyperphosphaturia. In short, there is intense hyperexcretion of calcium phosphate. Hyperexcretory calculosis

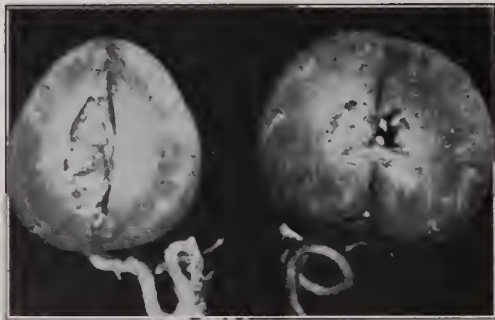


Fig. 1—Bilateral lithiasis in a rabbit fed oxamide daily for seventeen days; larger masses lie behind the free margin where the calices are attached to the renal parenchyma.

thus approaches the point of establishment as a clinical entity, the chemistry of the stone with concomitant studies of the blood and urine leading to its possible diagnostic recognition.

ENCRUSTATION CALCULOSIS

However, not all calculosis is to be explained on the basis of crystalline hyperexcretion. Rosenow and Meisser in 1923 produced calculi in dogs by dental implantation of streptococci recovered from apical abscesses of patients suffering with stone. Hegar and Magath in 1925 introduced proteus amoniae from the urine of stone-forming patients

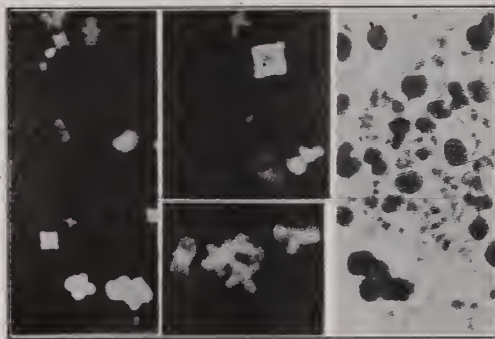


Fig. 2—Oxamide crystals as observed in urine under the influence of the urinary colloids. These crystals have assumed a morphology altogether different from the synthetic form. We can trace the evolution of crystals through non-coalescent crosses, crosses with interbranchial spaces partly filled out, squared forms and coalescent spheroids.

into the bladders of rabbits with resultant calculosis. Hryntschak and Hellstroem have had similar results from intravenous injection of staphylococci isolated from urines of patients with lithiasis.

In 1932 and 1934, with streptococci isolated from the urines of two extremely rapid stone-forming patients, I produced and studied calculus formation in rabbits. The organisms were introduced intravesi-



Fig. 3—Calcium oxalate stones in bladder. Result of intense oxaluria produced by injection of normal butyl oxalate and calcium chloride.

cally after a mild chemical cystitis had been produced with 1-1000 alcoholic salicylic acid solution. Intense alkalinization of the urine with an abundant

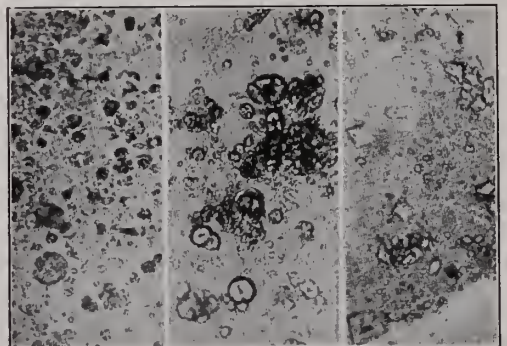


Fig. 4—Small calcium oxalate calculi experimentally produced as in text, crushed on slides to show crystalline elements in structures. Note that the small fusing spheroids constitute the structural units.

amorphous sediment of carbonates and phosphates occurred. The initial lesion was found to be an inflammatory necrosis of the vesical mucosa. The

surface cells became impregnated with lime salts. From this encrusted surface particles subsequently became broken off, with the formation of sand and free calculi.

During the past two years we have undertaken a histologic study of human kidneys removed for calculous pyonephrosis. Blocks of tissue several mm. thick were cut from areas in the calyces and pelvis contiguous to the calculi. The stone and all loose sand fragments were thoroughly washed away in running water and the tissue placed in 10 per cent formaldehyde. On staining sections from these

Clinically the association of infection with lithiasis needs no elaboration. Abundant evidence supports the view that urea-splitting organisms are most frequently at fault in producing alkaline carbonatic and phosphatic stone. Rovsing feels that infection accounts for 71 per cent of recurrences and goes so far as to advocate nephrectomy when a urea-splitting stone-forming organism is found to persist on one side. The bacteriologic specificity of these organisms to form stone is borne out by the experimental work where each observer has found negative results when non-specific strains were used.



Fig. 5—Intense calculosis from infection with streptococci from urine of rapid stone forming patient. Note encrusted cystitis, dilated ureters, and pyonephrosis. Multiple concretions in bladder and both kidneys. Rabbit. Experiment X. Five weeks after infection.

blocks by Von Kossa's silver nitrate method, lime salts were found lying within and on the surface of cells of the terminal portions of the collecting tubules and papillae. Here and there a tuft of lime impregnated cells appeared to be in process of being broken off to form the seed for growth of a definite calculus. This histologic study corresponded in every detail to that observed in rabbit's bladders with experimental streptococcic calculosis.

I have described this mechanism as "encrustation calculosis". Its action is apparently more local in the urinary tract than that of hyperexcretory calculosis, where both experimentally and clinically there is an apparent tendency to produce calculi bilaterally and at many points simultaneously.

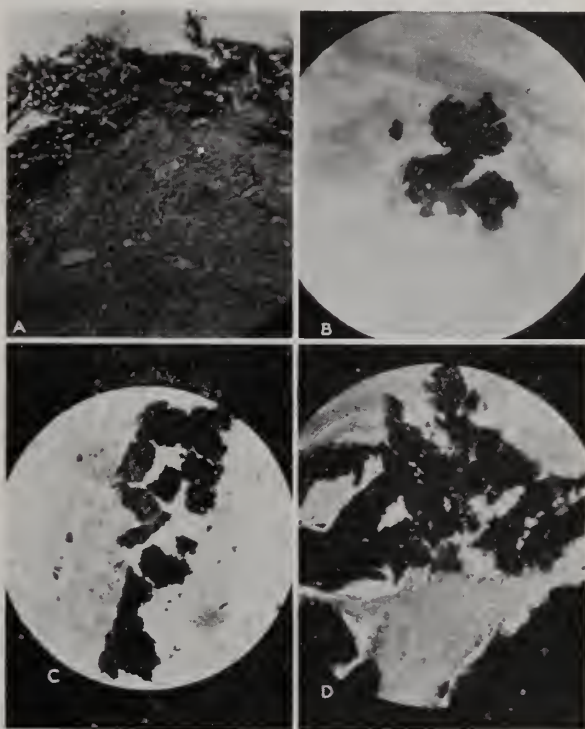


Fig. 6—Histogenesis of experimental encrustation lithiasis produced by infection with streptococci. A. Rabbits bladder showing beginning of lime salt deposit in necrobiotic epithelium. B. Growth of calcified mass within and upon epithelial cell. Note intracellular deposits of calcium on effete epithelium. C. Further growth of process with breaking off of fragments. D. Fully developed encrusted cystitis from which calculi arise.

VITAMIN DEFICIENCY LITHIASIS

We must consider briefly the work of those who hold for a vitamin deficiency as a cause of stone. The experimental work of Osborne, Mendel and Ferry, of Van Leersum, Fujimake, McCarrison and Higgins is well known. It appears that rats, Dalmatian dogs and chickens will develop urinary calculi when starvation of vitamin A is carried out to such an extent that extreme malnutrition is produced.

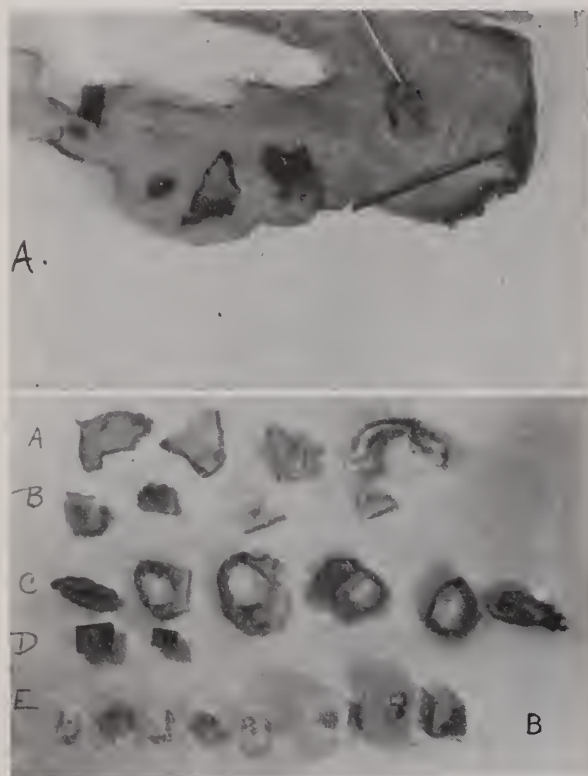


Fig. 7—Histogenesis of calyceal calculus in human kidney. A. Calculous pyonephrosis in human kidney, area surrounding calyceal stone. B. Sections of tissue surrounding calyceal stone. Removed and washed free of all gross calculous particles. Microscopic sections made from these areas in quasi serial manner are stained with Von Kossa stain for calcium phosphate.

The geographic incidence of stone, its frequency in bladders of male children in certain endemic areas, the decreased incidence of calculus as a result of better dietetics as brought out by Mr. Joly, the high incidence of stone in Florida and California as shown by Holmes and Coplan, its usual absence in the meat-eating negro,—all of these features have been explained on the basis of dietary content in vitamin A.

While I suggested the use of vitamin A in the treatment of lithiasis as early as 1930, I still feel that its place as a specific therapeutic agent for stone has not yet been established with scientific exactitude. My reasons are these:

1. Patients with stone do not present the excessive vitamin A deficiency which is necessary to form calculi in animals.
2. We have seen stones grow in size and have seen recurrences during intensive vitamin A administration.
3. Chronic non-calculous infections are not appreciably affected by vitamin therapy.

4. Animals with experimental hyperexcretory and encrustation lithiasis of infectious type are not protected by vitamin A.

5. The use of acid diet and drugs, such as will presently be described, with vitamin A precludes the scientific evaluation of this vitamin as a specific for stone.

However, the salutary effect of vitamin A on epithelial structures is accepted by authorities on nutrition and one cannot say it is without value.

I have come to regard vitamin A therapy in lithiasis much as I regard it in the treatment of respiratory infections, a good tonic but by no means a consistently effective prophylactic.

THE FACTOR OF THE URINARY REACTION

The H-ion concentration is a great factor in aiding the urinary colloids to maintain solution. Each constituent of stone has its ideal range for chemical precipitation, this being modified by the urinary dilution and the quantity of colloid and crystalloid present, factors constantly varying under normal conditions. The urates, oxalates, crystalline, carbonates and phosphates tend to form in urines of relative neutrality or acidity. The alkaline phos-

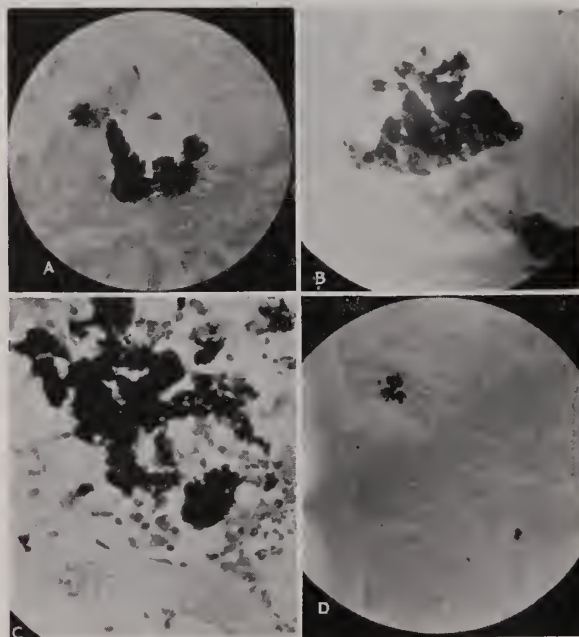


Fig. 8—Histogenesis of calyceal stone in human kidney. A. Calcium deposits within and upon calyceal epithelium. Note lime deposits within and upon epithelial cells. B. Growth of epithelial calcification into lumen. C. Extensive lime impregnation. Note especially how calcium salts fill up cells with moth eaten or wavy appearance at margin corresponding to area of cytoplasm in effete epithelium where lime is being deposited. D. Isolated areas of calcium deposit within cellular tissue adjacent to calyx.

phate and carbonate stones tend to form in infected strongly alkaline urines. Some consider the intense alkalinity itself as the probable cause of such stone deposition. Lithiasis has been noted in patients on alkaline ulcer diets. However, all ranges of pH are noted normally in animals and man with deposition of crystalline sediments corresponding to the range. Stone is almost always absent. Some factor other than alkalinity alone seems necessary before stone will form.



Fig. 9—Marked deposit of oxamide in left kidney of a rabbit fed oxamide nine days as the result of low-grade stasis caused by rubber band around the left ureter. The untreated right kidney is clear.

THE FACTOR OF UROSTASIS

Urostasis has been considered a possible cause of stone. Certainly it is so frequently present without stone that we cannot accept it as a primary factor. In maintaining infection and promoting stagnation, however, urostasis becomes a matter of great moment. When the stone-forming process is present, when lime salts are being deposited on effete cells, or the crystalline coagulation of hyperexcretion is taking place, it is easy to understand how urostasis augments the retention and growth of stony particles.

An experiment with oxamide lithiasis affords an excellent physical demonstration of the action of urostasis. A rubber band was placed around the left ureter of a rabbit so loosely as not to interfere with renal secretion. This, as a foreign body, irritated the ureter slightly, thus producing a minimal degree of urostasis. On feeding small amounts of oxamide, concretions were consistently noted in the

pelvis of the treated left side, whereas the pelvis of the untreated right side remained clear. Other experiments, in some of which the kidney pelvis of one side was traumatized by needle punctures, and in some, where fragments of muscle tissue were placed in one pelvis, produced similar results.

The role of urostasis in maintaining infection is a principle so well established and the removal of urinary obstruction in the therapy of infection so widely advocated that I shall not stress the point further at this time.

RARER TYPES OF CALCULI

Stones associated with injuries and disease of bone and with injuries of the spinal cord come up for consideration. Whether due to neurotrophic factors, stasis, or upsets of calcium metabolism has not yet been determined.

Fibrin calculi, bacterial calculi, cystin, xanthin and indigo types are occasionally found. The mechanism of their production is also elusive. Theoretically, fibrin stones may arise from the simultaneous precipitation of fibrin, an irreversible colloid, and of calcium salts such as occurred in Schade's test tube experiment. Bacterial clumps become encrusted with urinary salts, while cystin, xanthin and indigo stones owe their genesis to errors in metabolism and simulate hyperexcretory stone in type.

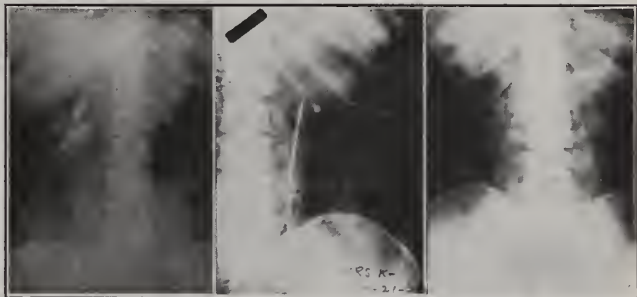


Fig. 10—Large carbonatic calculeous pyonephrosis in right kidney treated by nephrectomy. Recurrence in left kidney after thirty days. Streptococcal infection. Reduction in size of calculeous mass with two small fragments remaining after thirty days of urinary acidification and pelvic lavage with phosphoric acid.

From this background we must conclude that stone is not a disease entity. Rather it is a physical manifestation of crystalline matter, i. e., a change in form, which results from several physico-chemical mechanisms. Two of these mechanisms, viz., hyperexcretion of crystalloids and encrustation of necrobiotic epithelium with lime salts seem to have been definitely established on experimental and

clinical grounds. Doubtless there are and must be many other mechanisms yet to be determined in order to explain the manifold aspects which stone disease may assume.

THE PURPOSIVE DISSOLUTION OF URINARY CALCULI

Crowell first demonstrated dissolution of urinary calculus when he caused recurrent cystin calculi to dissolve by intense urinary alkalization and cystoscopic lavage with alkaline drugs. Randall was next able to dissolve encrustations and small stones of alkaline type by lavage with dilute phosphoric acid, a method which continues to be applied with satisfaction in selected cases.

In 1932, I attempted in several instances to shift the urinary reaction to the acid side in an effort to dissolve alkaline stones. Dilute aqua regia, the ketogenic diet and ammonium chloride and nitrate were first employed. We then began the use of acid and basic diets as means of changing the urinary reaction. Using these agents, I was able to report in June, 1933, with X-ray demonstration the first case of partial dissolution of a carbonatic calculus by means of urinary acidification. To date I have been successful in causing seven cases of alkaline stones to disintegrate by urinary acidification. In one of these two fragments persisted and required operative removal.

In this connection the study of dissolution of surgically removed calculi in weak acids *in vitro* has been interesting. Most carbonatic and phosphatic stones become soft and disintegrate on their surfaces but soon a harder resistant layer is encountered upon which the acid fails to act. Several stones removed operatively after attempts at dissolution, likewise proved resistant to dissolution in the test tube. From this we learn that softer sandy concretions will probably be more easily dissolved than the harder more compact varieties which cast dense discrete shadows in X-ray.

Uratic calculi are usually formed in acid urine so that further acidification would seem illogical. For this reason, if the urine is acid at the beginning we have reversed the procedure and given alkaline drugs and diet. I have two cases of disintegration of stone with alkaline therapy, in both instances the fragments passed being found to be uratic in composition. For cystin lithiasis also, alkalization is indicated.

The principle of the acid base shift in stone dis-

solution has been variously employed by myself and others with variable results. From personal experience I could cite numerous instances of failure. Indeed, this principle is not always easy of intelligent application. Each case must be studied individually. Certain uratic and oxalatic calculi, fibrin types and phosphatic varieties are found with acid and alkaline, with infected and uninfected urines. No single dietary or drug therapy can be expected to give consistent results. Each case must be studied individually. Stones are almost always more or less mixed in chemical composition. This varies with the previous diet, individual metabolic trends and consequent variation in the amount of crystalline stone-forming material excreted. The urinary dilution, the quantity and kind of colloidal matter present, the H-ion concentration, factors constantly changing from hour to hour during the day come into play. Only within narrow limits can we ever attempt to control them clinically.

PREVENTION OF RECURRENCE OF URINARY CALCULI

Perhaps the most practical problem which faces the urologist is prevention of recurrence of stone after surgical removal. In 1930 I attempted to outline a therapeutic program for the prevention of recurrence. In 1933 this had assumed a more definite form and with certain modifications these principles of treatment are advocated today. I outline them as follows:

1. *Care to remove all stones and fragments as far as possible by surgery or cystoscopy.*—At operation, fluoroscopy or immediate kidney X-ray should be used and the avoidance of exposure of suture material to the urinary stream practiced. Stones and fragments left at operation can hardly be classified as recurrence. In badly infected kidneys, nephrostomy may be of value in preserving renal tissue.

2. *Qualitative chemical examination of the calculus removed.*—This should be carried out immediately. A quantitative examination of the various constituents would be ideal, but is hardly to be offered by the average clinical laboratory. I have in previous writings presented an outline which can be carried out in any clinical laboratory and which has proven of value in my own experience.

3. *Repeated X-ray immediately and at periods of six months to one year should be practiced.*—With smaller recurrences dissolution or removal by cystoscopic means may be possible.

4. *Correction of demonstrable metabolic errors.*—A careful study of the patient's metabolism should be carried out with every feature of laboratory diagnosis available. The blood uric acid, the serum calcium, phosphorus, and phosphatase determinations seem especially important data which we should routinely and repeatedly secure if we are to properly evaluate the incidence of hyperexcretory calculosis. If hyperparathyroidism is suggested, X-rays of the bones and other data pertinent to this disease should

be determined. If hyperparathyroidism is demonstrated, surgical investigation of the parathyroid bodies is indicated.

5. *Dietary regulation.*—Dietary regulation assumes two aspects. First, the administration of a diet which will deplete exogenous supply of the stone-forming material, e. g., a low purin diet in uratic calculi, or a low oxalate dietary in oxalatic stone. Second, a dietary such as the acid or alkaline ash type with attempts to change the urinary

Measures Suggested in Preventive Therapy of Recurrence of Urinary Calculi
WITH COMMENTS ON THE TREATMENT OF URINARY INFECTIONS

Stones should be removed surgically or cystoscopically when possible. Dissolution of large dense calculi unlikely with present methods.

A. Chemical analysis of stone removed.

A SIMPLE METHOD FOR THE QUALITATIVE ANALYSIS OF URINARY CALCULI

(Modified from Hawk and Bergelm—Physiologic Chemistry, and Hammarsten-Lehrbuch der Phys. Chem.)
Domanski—Jr. Urol. Mar. 1937.

Each of the concentric layers of the calculus must be subjected to separate analysis. Material for examination is obtained by sawing the calculus carefully thru the nucleus, then separating the layers, or by scraping off from each layer (without separating the layers) enough powder to conduct the examination as outlined below. Seek nucleus separately with care. Study microscopically for organized organic matter (cells, bacteria) or foreign body.

| On Heating the Powder on Platinum Foil, it* | | | | | | | |
|---|----------------------------------|--|--|--|---------------------------------------|--|--------------------|
| Does burn | Without flame | The powder gives the murexide test.** | No Noticeable Ammonia Reaction Add conc. HNO_3 to powder—No gas evolved. | | Uric acid. | | |
| | | The powder when treated with KOH gives*** | Strong Ammonia Reaction Add conc. HNO_3 to powder—Evolution of gas (oxides of nitrogen). | | Urates (ammonium, calcium, magnesium) | | |
| | With flame | Does not give murexide test.** The powder dissolves in nitric acid without effervescence. The dried yellow residue becomes orange with alkali, beautiful red on warming. | | | | Xanthine. | |
| | | Flame pale blue, burns a short time. Peculiar sharp odor. The powder dissolves in ammonia, and six-sided plates separate on the spontaneous evaporation of the ammonia. | | | | Cystine. | |
| | | Flame yellow, pale, continuous. Odor of resin or shellac on burning. Powder soluble in alcohol and ether. | | | | Urostealth | |
| Does not burn | The powder when treated with HCl | Flame yellow, continuous. Odor of burnt feathers. Insoluble in alcohol and ether. Soluble in potassium hydroxide with heat. Precipitated herefrom by acetic acid and generation of hydrogen sulphide. | | | | Fibrin | |
| | | Effervesces | | | | | Calcium carbonate. |
| | | Effervesces | | | | | Calcium oxalate. |
| | | Filter—Make alkaline to litmus with 15% NH_4OH sol.—Then just acid with 5% acetic acid —Let stand 1 hour—centrifuge and examine for crystals of calcium oxalate:—or treat sediment with $\text{N/ H}_2\text{SO}_4$, heat and add drop 0.01 N- KMnO_4 . Decolorization of permanganate indicates calcium oxalate. | | | | | |
| Does not effervesce | | No ammonia or, at least, only traces of ammonia. Powder dissolves in acetic acid or HCl. This solution is precipitated by ammonia (amorphous precipitate). | | | | Bone-earth (magnesium and calcium phosphate). | |
| The powder gently heated, then treated with HCl | | Abundant ammonia. The powder dissolves in acetic acid or HCl. This solution gives a crystalline precipitate with ammonia. | | | | "Triple phosphate" (mixed with unknown amount of earthy phosphate) | |
| The powder when moistened with a little KOH | | | | | | | |

*Flame test frequently imperfect with small amounts.

**Murexide Test

To a small amount of the powder in a small evaporating dish add 2-3 drops of concentrated nitric acid. Evaporate to dryness over a very low flame or water bath. A red or yellowish residue remains which turns purplish red after cooling the dish and adding a few drops of very dilute ammonium hydroxide. The color is due to the formation of murexide.

***KOH frequently fails to liberate appreciable ammonia.

Most stones are mixed in composition.

Rapidly recurrent stones tend to be pure and relatively unmixed and of the same composition as their predecessors.

reaction to the point of maximal urinary solution of the stone-forming chemical. Combinations of the two may be and should be attempted.

As for uratic calculi, the consistency with which

these stones are associated with a hyperexcretion of uric acid is not known. However, intense urinary alkalization is attendant upon disappearance of urate crystals from the urine. Therefore, a low

B. Blood chemistry studies—

Blood uric acid—serum calcium—blood phosphorus. (Repeat several times.)

C. Uric calculi—Low purine diet*—

Intense alkalization of urine.

Calcium oxalate calculi—

Low oxalate dietary* Intense acidification of urine. Give Vitamins B and D to decrease oxaluria.

Calcium oxalate is precipitated in a wide range of urinary reaction. Best solution is maintained at pH 5.2, poorest at pH 6.1 (Maslow). This is most difficult stone to dissolve or to control by urinary reaction.

Calcium carbonate and calcium or ammonium magnesium phosphate calculi.

Low phosphate dietary.* (Especially avoid milk and dairy products. Probably high acid ash diet better).

Intense acidification of urine. (pH 4 to 5).

Cystin calculi—

Intense alkalization of urine.

*An excellent series of diets are listed in an article by Grant and Simpson—Southern Medical Journal—July, 1930. Also consult Barbares. Treatment by Diet, Lippincott, 1934.

D. To acidify urine—ACID ASH DIET—(see next page).

Dilute nitrohydrochloric acid (aqua regia).

R Conc. nitrohydrochloric acid 10 cc.
Distilled water q. s. 100 cc.

Sig: Take 1 drachm in 1 glass water q. 1 to 2 hrs. to tolerance. Sip through tube and rinse mouth with sodium bicarbonate solution after taking. Care not to swallow bicarbonate solution.

Or Use ACID DIURETIC MIST.

R Ammonium benzoateDr. II
Ammonium chlorideDr. III
Ammonium nitrateDr. III
SaccharoseOz. IV
Elixir of Lactated Pepsin q. s.Oz. VIII

N. B.—Mix in mortar to syrup.

Sig: Drachms one to two in glassful water every one to two hours unless nauseated.

Each drachm contains 0.5 gm. of acidifying drug.

This syrup is usually well tolerated and has been found the best urinary acidifier in our experience. It may be used together with—

Enteric coated tablets—Ammonium Chloride—
6 to 10 gms. daily

Enteric coated tablets—Ammonium Nitrate—
6 to 10 gms. daily

Watch stool to be sure enteric coated tablets are absorbed.

The use of the acid diuretic mixture, dilute aqua regia, enteric coated tablets, and acid ash diet singly or simultaneously has generally been well enough tolerated to render acid resistant urinary alkalinity. If patient is nauseated omit one or two doses and continue. When 8 to 10 gm. acidifying drug are exceeded in 24 hours watch for systemic acidosis. Certain types of urea splitting organisms, e.g., proteus and some staphylococci defy urinary acidification. Acid urine is possibly secreted, but is at once alkalized by bacterial action.

LACTIC OR HYDROCHLORIC ACID MILK (10 to 60 drops of lactic or dilute HCl to 6 oz. boiled milk)—
1 glass 4 times or more daily. Useful in infants and children.

E. To alkalize urine—ALKALINE ASH DIET—see next page.
ALKALINE DIURETIC MIST.

R Kali citratisOz. I
Sodii bicarbonatisDr. IV
Syr. OrangeOz. IV
Aque Dist. q. s.Oz. VIII

Sig: Drachms III in water a.c. and h.s.

Magnesia, potassium citrate or acetate, sodium bicarbonate in suitable prescription.

F. TO TREAT THE URINARY TRACT INFECTION—

SMEARS AND CULTURES at Initial Urologic Examination.

Study voided and catheterized bladder urine, catheterized ureteral specimens from each kidney, determining pH on usual dietary.

Differentiate infectious organisms by laboratory methods. (Gram stain simple and useful.)

NEOARSPHENAMINE—0.2 gm. intravenously followed in 5 to 7 days by 0.3 gm.

Frequently of value in staphylococcus and streptococcus fecalis. Do not continue if first two doses show no improvement. Use cautiously in acute infections and with renal insufficiency.

METHENAMINE—Keep urinary reaction below pH 5.6. Push dosage to tolerance 4 to 8 gm. daily. Watch urine for increase in red cells or casts. Do not continue large doses over long period. Drop maintenance dose to 3 to 4 gm. daily. If not effective after several days do not continue. If given intravenously calculate amount in total daily dosage.

ACRIFLAVINE—CAPROKOL—AZO DYES (Pyridium, Serenium, etc.). Seldom sterilize urine, but good bacteriostatics and reduce infection.

For H-ion Determination Use Indicator with Color Card such as LaMotte Duplex Indicator (LaMotte Chem. Products Co., Baltimore).
or Use Methyl Red Paper { Red—pH below 5.5;
Coleman & Bell { Yellow—pH above 5.5.
(approx.)
or Nitrazene Paper { Green—pH below 5.3;
{ Yellow—pH above 5.3.
or 0.04 percent chlorophenol red—1 drop to 20 drops urine { Red—pH 5.2;
{ Pink—pH 5.5 to 5.8.
— Patient May Be Taught To Use These —

purin alkaline ash diet is theoretically ideal for uratic stone.

Oxalatic calculus presents a problem. Exogenous sources should be excluded by low oxalate diet.

However, as Neville has pointed out, the source of oxaluria is probably endogenous, being associated with vitamin B—D deficiency. Oxaluria may be corrected by administration of these vitamins.

KETOGENIC DIET—References—Clark, A. L. J. A. M. A. 107: 1280-1284-1936. Nesbit, R. M. J. A. M. A. 105: 1183-1184-1935.

Not well tolerated in many patients. Used less frequently now as mandelic acid in most instances affects same organisms more successfully and is better tolerated. Bacillary and streptococcus fecalis infections respond best, coccal infections poorly except at times in lower urinary tract.

MANDELIC ACID—Has largely replaced ketogenic diet. Keep urinary concentration high by restricting fluids to 1000 to 1200 cc. daily (except in acute cases). Keep pH by acid-ash diet and drugs at pH 5.2.

Give 12 gm. mandelic acid daily to adults (as sodium mandelate or ammonium mandelate). Infants and children according to age. Do not continue over two or three weeks and examine urine carefully for appearance or increase of red cells and casts. In cases of renal insufficiency take care not to produce acidosis. Watch for nausea, vomiting, hyperpnoea and check CO₂ combining power of blood.

SULFANILAMIDE—In urinary tract effective for bacilli including proteus. Does not affect cocci so well. Streptococcus fecalis does not respond.

Active (probably most active) in alkaline urine. Keep pH at 7.5 or higher. Develops bactericidal urine in renal insufficiency. At present oral administration appears equally or more effective than intramuscular or intravenous routes. Secreted in poor concentration in prostatic secretion, but very effective in prostatic infection. Dosage not standardized—Start with 60 to 80 grains daily in four doses. Reduce to 40 grains daily after 2 or 3 days.

Watch tolerance of patient and for many bizarre untoward reactions—Progressive cyanosis, hemoglobinuria, hematuria, hyperpyrexia, leucopenia, agranulocytosis, erythraemia, dermatitis, anemia, jaundice and retinitis indicate discontinuance of drug. Usually prompt recovery from toxic symptoms ensues. Do not give any type of sulphates and especially avoid magnesium sulphate during sulfanilamide administration. Watch patient daily.

REDUCE FOCAL INFECTIONS—teeth—tonsils—prostate—cervix—alimentary tract.

SURGICAL DRAINAGE—Nephrostomy—Seminal Vesiculotomy—Cystostomy—Removal of prostatic obstructions—Suspension of kidney, etc.—when indicated.

UROLOGIC DRAINAGE—Indwelling catheters—Periodic cystoscopic, ureteral dilatation. Dilatation of small calibered urethras. Valuable measures if applied gently and increasing size of dilator gradually. Avoid trauma.

Lavage with 1 to 2% phosphoric acid, etc. Continuous irrigation with acids by any method is not tolerated by most patients and may provoke severe reactions. Of value chiefly in post-operative effort to prevent recurrence of stone.

SUMMARY:

Surgical removal of stone usually indicated when possible. Adjust urinary reaction in accordance with chemistry of stone.

Correct metabolic error—hyperparathyroidism, uric acid, oxalate, phosphate hyperexcretion. Reduce infection. For coccal infections use nearsphenamine and methenamine. For bacillary infections and streptococcus fecalis use urinary acidification and mandelic acid. In alkaline bacillary infections use sulfanilamide. Remove focal infection. Establish drainage.

Patients with bone disease (fractures, infections, tumors, osteitis deformans, osteitis fibrosa cystica); patients with spinal cord injuries or patients long bedridden—keep urine at acid range (pH 5 to 5.2) as prophylaxis against stone.

G. Increase Vitamin A Intake—Sources—Cod liver oil—Haliver oil—Carotene (Provitamin A).

FOODS—

| APRICOTS | CHEESE | Oysters | Vegetables with green or yellow pigment, as |
|------------|----------------|------------|---|
| BEEF LIVER | (Am. or Swiss) | Peaches | Asparagus |
| Beef Fat | CREAM | Pineapples | Beans, green |
| BUTTER | EGG YOLK | Prunes | Cabbage |
| Bananas | Kidneys | Tomatoes | CARROTS |
| Cantaloupe | Milk | | Corn (yellow) |
| CHARD | Oranges | | |

ACID-ASH DIET

(Expressed in cc. Normal reagent per 100 gm. food)

This diet is deficient in Vitamin C. For this reason Vitamin C vegetables of low alkaline-ash content may be added periodically if the patient is on the diet for a long time.

| | | | | | | | |
|-------------------------|------|------------------|-----|--------------------|-----|--------------------------------------|------------|
| Egg Yolk | 27. | Pork, lean | 10. | Crackers, soda | 8.3 | Bread (rye) | 4.9 |
| Oysters | 15.1 | Veal, loin | 9.8 | Pork chops | 8. | Corn Meal | 4.9 |
| Macaroni | 14.3 | Ham, smoked | 9.7 | Walnuts | 7.8 | Peanuts | 3.9 |
| Shredded Wheat | 12.2 | Sponge Cake | 9.0 | Bread, whole wheat | 7.3 | Corn, green | 1.8 |
| Whole Wheat | 12. | White Flour | 9.0 | Bread, white | 7.1 | Cranberries, Plums, including Prunes | |
| Oatmeal | 12. | Beef, ribs, lean | 9.6 | Perch | 6.3 | | |
| Sardines | 11.3 | Mutton, leg | 9.6 | Corn, (dry) | 5.9 | | |
| Eggs, whole | 11. | Soy bean Meal | 9.5 | Cheese, Cheddar- | | | |
| Beef, porterhouse steak | 10.9 | Rice | 9.3 | (American) | 5.4 | | |
| Chicken | 10.7 | Halibut, fresh | 9.3 | Egg White | 5.2 | Tapioca | Lard |
| Salmon, canned | 10.7 | Flour, white | 9.0 | Lentils | 5.1 | Butter | Sugar |
| Barley, pearl | 10.4 | Trout, salmon | 8.8 | Swiss Cheese | 5. | Cream | Cornstarch |
| Beef Liver | 10.5 | Cod fish | 8.4 | Bacon | 5. | Oil | |

NEUTRAL

ALKALINE-ASH DIET

(Expressed in cc. of Normal reagent per 100 gm. food)

| | | | | | | | |
|-------------------|------|---------------------|-----|---------------------|-----|------------------|------|
| Molasses | 56. | Citron | 9.6 | Bananas—C | 5.6 | Raspberries—C | 3.8 |
| Olives | 45.6 | Rutabagas—C | 8.5 | Oranges—C | 5.6 | Apples—C | 3.7 |
| Dried Figs | 32.9 | Rhubarb—C | 8.5 | Tomatoes—C | 5.6 | Pears, fresh | 3.6 |
| Spinach | 27.0 | Cucumbers—C | 7.9 | Beans, fresh string | 5.4 | Radishes—C | 2.9 |
| Raisins | 23.6 | Celery—C | 7.8 | Condensed Milk | 5.2 | Watermelon—C | 2.7 |
| Beans, dried | 18. | Cantaloupe—C | 7.5 | Evaporated Milk | 5.3 | Turnips—C | 2.7 |
| Dried Milk | 18. | Lettuce—C | 7.4 | Cauliflower—C | 5. | Milk, whole, raw | 2.5 |
| Chard | 15.8 | Potatoes, white—C | 7. | Lemons—C | 5. | Buttermilk | 2.2 |
| Beans, fresh lima | 14. | Cocconut | 7. | Peas (dry) | 5. | Onions—C | 1.5 |
| Almonds | 12.3 | Pineapples, fresh—C | 6.8 | Peaches, fresh—C | 5. | Pumpkins—C | 1.5 |
| Parsnips | 12. | Sweet Potatoes—C | 6.7 | Chestnuts | 5. | Peas, fresh—C | 1.3 |
| Dates | 11. | Cabbage—C | 6. | Cherries—C | 4.5 | Asparagus—C | 0.8 |
| Beets, fresh | 10.9 | Baked Beans | 6. | Mushrooms | 4. | Grapefruit—C | alk. |
| Carrots—C | 10.8 | Apprteots | 6. | Grape Juice | 4. | Ice Cream | 0.2 |
| Figs | 10. | | | | | | |

C signifies high Vitamin C content.

While oxalates are precipitated in a wide range of urinary reaction, their solubility is perhaps better at a higher acid range. Therefore, a high acid ash diet, low in oxalates, and rich in vitamin B and D is to be given.

Phosphate and carbonate stones require a high acid dietary.

Cystin is held in solution in alkaline urines. Hence the basic diet is indicated.

6. The forced administration of vitamin A.—

SOFT ACID-ASH DIET

May have the following foods:

- EGGS (poached, soft boiled, souffle, egg custard, shirred, creamed, omelet, scrambled).
- MACARONI (creamed, buttered or cooked in chicken stock).
- COOKED CEREALS (rice and grits may be served as vegetables or cereals, and oatmeal, cream of wheat, farina, and wheatena, also cornmeal as mush).
- CRACKERS.
- BREAD (whole wheat, rye and white).
- CORN (green or canned, either very tender or run through sieve to remove outer skin).
- DESSERTS (custard, rice puddings, tapioca custard, bread puddings—made with eggs and one-half milk and one-half 20% cream).
- CHICKEN (stewed, creamed or baked).

Later may have:

- Fresh halibut boiled, broiled or baked.
- Fresh trout boiled, broiled or baked.
- FRUITS (cranberries, plums (cooked) and prunes (may be combined with eggs as whips or souffles).
- NEUTRAL FOODS (cream, butter, tapioca, sugar, cornstarch).

SAMPLE MENU FOR DAY:

| BREAKFAST | LUNCH | DINNER |
|-------------------------------------|---|-------------------------------------|
| Prunes with cream. | Cream of chicken soup with crackers. | Bouillon with toasted crackers. |
| Oatmeal, shredded wheat with cream. | Egg omelet. | Stewed chicken with gravy. |
| Poached egg on toast. | Buttered grits. | Steamed rice. |
| Toast with butter. | Stale muffins (toasted with butter). | Stewed corn. |
| Coffee or tea with cream and sugar. | Prune whip (made with stiffly beaten egg white, pureed prunes and sugar). | Toast with butter. |
| | Coffee or tea with cream and sugar. | Baked chocolate custard. |
| | | Coffee or tea with cream and sugar. |

SOFT ALKALINE-ASH DIET

FRUITS ALLOWED—(all fruits on list)—

- Orange juice, pineapple juice, grapefruit juice, tomato juice, peach juice, apricot juice, pear juice.
- Baked apple without skin, baked pear without skin, fresh or canned applesauce, canned peaches, pears, apricots, Royal Anne cherries.

VEGETABLES on alkaline list—

- All vegetables must be strained. Carrots, peas, lima beans, butter beans, string beans, tomatoes, asparagus, spinach, beets, squash, baked potato, or mashed potato.

MILK AND MILK PRODUCTS ALLOWED—

- Sweet or buttermilk, cottage cheese, cream, butter.
- Any ice cream without solid fruits or nuts.
- Chocolate milk or hot chocolate.

BREADS ALLOWED—

- Toast (white or brown) NOT MORE THAN ONE AND ONE-HALF SLICES EACH DAY.

EGGS—Do not eat more than ONE egg a day.

DESSERTS (BESIDES FRUITS) ALLOWED—Simple puddings made with any of the allowed fruits—Baked custards, tapioca puddings.

COFFEE AND TEA—MAY BE TAKEN AS DESIRED.

Sugar, salt and pepper as desired.

SAMPLE MENU FOR DAY:

| BREAKFAST | LUNCH | DINNER |
|-----------------------------------|-----------------------------------|-------------------|
| Any allowed fruit or fruit juice. | Cream or vegetable soup. | Fruit cup. |
| One egg. | Baked potato. | Mashed potato. |
| MILK. | Vegetable purees. | Vegetable purees. |
| Coffee or tea. | ½ slice toasted bread. | ½ slice toast. |
| ½ slice bread (toasted). | Milk. | Milk. |
| | Allowed fruit or dessert or both. | Dessert. |

NOTES ON SOFT ALKALINE-ASH DIET:

In keeping a diet alkaline—eggs, which are one of our most valuable sources of protein in the soft diet must be very limited, so in order to keep the body built up a great deal of milk should be consumed.

The patient should take at least 1½ quarts of milk each day. This may be used in soups, specially-prepared drinks, or may be taken plain.

Notice that none of the foods allowed are limited in amounts except eggs and toast. These are limited because they contain acid properties.

While using vitamin A since 1930 freely, I have never showed the enthusiasm which many workers in this field have had. I cannot conceive cod liver oil or carotene to be more specific for stone disease than they are for the common cold. Nevertheless, the tonic effect of vitamin A or the epithelium of the body is indisputable and if well tolerated by the already much dieted patient, it should be given.

7. *The reduction of urinary infection and of focal infection.*—A persistent effort to eradicate or to reduce to a minimum the local urinary infection should be made. Initial and repeated bacteriologic studies of the urine, using cultures and smears, are imperative. The initial examination is perhaps most important. Oral antiseptic drugs may aid and the ketogenic diet or mandelic acid therapy may be tried with success. Neoursphenamine in coccal infections is of value. Sulfanilamide gives brilliant results at times. Focal infection should be routinely attacked. Dental, tonsillar, prostatic, cervical, and alimentary tract infections demand especial care.

8. *The correction of urosthiasis.*—I emphasize that the chief object of attack is urosthiasis and I routinely practice periodic post-operative lavage with the free use of indwelling catheters and ureteral dilatation with bulbs. Lavage with phosphoric acid in 1 to 2 per cent solution may dissolve encrustation, sand, or minute calculi. The dilated ureter may afford passage to small concretions.

9. *Change of urinary reaction.*—The reaction of the urine should be shifted to the opposite of that which is ideal for the formation of the stone. This feature has been previously dealt with. The urine from each kidney should be separately studied with indwelling catheters. The patient should be instructed to make his own H-ion determination either with a LaMotte or similar indicator or with methyl red or chlorphenol red paper. There are several potential dangers in keeping the urine at an intensely acid or alkaline range over a long period of time. Systemic acidosis may be produced by too large or too long continued dosage of acid drugs and even nephritis can occur. Certain urines infected with urea-splitting organisms are most resistant to acidification therapy as the acid secreted urine is quickly alkalized by bacteriologic action of these organisms. At times acidification by oral therapy is impossible. For this reason patients on such a regimen should be under constant observation by an understanding urologist who is familiar

with this type of work. Chute has called attention to the fact that ammonium salts may actually form a source of food for urea splitting organisms if urinary acidity is not attained and that urinary acidification will increase the elimination of calcium salts in the urine. Such calcium hyperexcretion may thus theoretically promote the growth of stone. Likewise, we must bear in mind that shifting the urinary reaction may only mean that a stone of different chemical composition may form.

In 1933, I reported sixteen cases of rapidly recurrent calculi which had had their cycle of recurrence broken in from one to nine years by the use of such measures. Since that time three similar cases have been treated successfully. The result of others, in this connection, are encouraging and serve to show that my own experience with a relatively small group of patients has not been erroneously interpreted.

SUMMARY

Stone is not a disease entity. Several mechanisms enter into its production. Two of these, viz., "hyperexcretion" and "encrustation" are described.

The reaction, the crystalloid and colloid content of the urine determine the chemical composition of the stone.

The genetic factors in lithiasis of rarer types are unknown.

Dissolution of calculi by the acid-base shift may be accomplished at times. However, the limitations of the method are definite.

Prevention of recurrence of calculi can be attained in the majority of cases following a therapeutic program such as is described.

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DISCUSSION

DR. JOSEPH F. GEISINGER, Richmond: I have welcomed the privilege of discussing this paper, more particularly because it offers to me an opportunity I have long desired to express publicly to Dr. Keyser my appreciation of the very noteworthy work he is doing in this field. Certainly it is very pleasing to realize that one of our own members has come to occupy a conspicuous position among the handful of physicians in the world who are contributing most to a solution of the vexatious problem of the etiology of urinary stone. Wherever this problem is discussed now, here or abroad, the name of Keyser must necessarily be quoted. I doubt if the Society is fully aware of this fact and it is well enough for some one to bring it to your attention.

As you have doubtless surmised from what Dr. Keyser

has just said to you himself, the etiology of stone is an exceedingly complicated matter and, while much work of great value and interest has been done, much remains to be done. It would be superfluous of me to attempt to review this portion of his admirable paper, as I could do no more than repeat his own words. Instead of this, I shall content myself with a single observation, namely, that when the final chapter in the etiology of stone is written—if ever—I feel very sure it will then appear that no single factor dominates this etiology, but that in fact there are present as many as perhaps a half-dozen factors which, in a given case, may act singly, conjointly, or in unison.

The remainder of Dr. Keyser's paper, which I regret the Society could not hear in full, introduces us to a consideration of the prevention of the recurrence of urinary calculi. Here we touch something of the greatest practical consequence for it is difficult to imagine a situation more disheartening than that of the patient who faces the knowledge that the stone which has caused him so much suffering and led him through the dangers and expense of a major surgical procedure has returned, leaving him as bad off as he was before—or worse. Such recurrence is not very common but it should be made still less common if by any human calculation or effort this can be brought about. Every stone case coming to surgery should be individualized and acutely studied with reference to visible etiological factors so that a post-operative period of oversight—often totally neglected—may be intelligently directed toward the elimination of these factors, which otherwise remain contributory to further stone formation. If there is a deficiency of vitamin A this should be supplied. A determination of the mineral elements entering into the composition of the stone will suggest certain dietary regulations, for whatever they may be worth. The reaction of the urine that has permitted or actually aided the formation of the stone should be changed to some other reaction. This will usually mean a change to the acid side, which is often easy, sometimes difficult, and occasionally impossible. Foci of infection must be eliminated and any tendency to stasis or to residual infection in the urinary system itself must be systematically attacked. The value of the ureteral catheter here is inestimable.

The direct introduction of acid into the pelvis of the kidney, mentioned by Dr. Keyser, has come into vogue comparatively recently and is a helpful and logical procedure in which I have a particular personal interest. Nearly twenty years ago I advocated this measure as an aid in the softening or dissolution *in situ* of certain types of calculi but proposed hydrochloric acid instead of the phosphoric acid now in common use. With the aid of the department of chemistry of the Medical College of Virginia, we undertook some modest research but our suggestions were coldly received in certain eminent circles, and, being then young and timid, I said no more upon the subject though I continued to use the acid from time to time.

Dr. Keyser did not mention, though I am sure he had in mind, the importance of one other step in the treatment which, in my own judgment, is probably of as much consequence as any other single detail—namely, the pro-

motion of free water intake. With a tide of limpid urine continuously washing out the pelvis and with its own mineral content highly diluted, the development, as well as the recurrence, of calculus would certainly appear to be less likely.

When a program of this sort is conscientiously followed—with care at operation to remove all stones present (controlling this, if necessary, by the X-ray at the table), and with better realization by the surgeon that his duty does not stop here but includes careful post-operative direction and treatment—the incidence of recurrence will continue to fall, whereas the happiness and peace of mind of both doctor and patient will correspondingly improve.

DR. LAWRENCE T. PRICE, Richmond: I wish to join Dr. Geisinger in calling attention to Dr. Keyser's work in trying to work out the problem of the cause of stone. There is no subject in urology that has disturbed us quite so much as what causes stone formation. As Dr. Keyser brought out, every possible experiment has been worked out by first one and then another to determine the cause universally, but it seems that each case is an individual problem and what causes stone in one person may not in another. It is peculiarly noticeable that certain localities produce more stones than others; for instance, in India and in our own country, in the southern portion of Virginia, there are great numbers of stone-farmers. Up in this section, where you would think there would be stone, in this hard-water section, there seem to be relatively few.

I rose particularly to reiterate what Dr. Geisinger called attention to, and that is the great intake of water. There is no one thing that has as much bearing on the prevention of stone as the great intake of water. It is not the quality of the water that is important; it is the quantity. I remember very well Dr. William H. Taylor, in lecturing on chemistry, saying that a man goes to the springs and drinks a barrel of water to get a dose of lithia. This is quite true, but it is the washing out of the solid ingredients of urinary content that is important, the dilution.

The question of recurrence cannot be determined in each individual, but of course in each case the stone should be analyzed, and, as to whatever the chemical content is, that question should be dealt with directly. The alkalization or acidification of the urine sometimes will solve the problem. But, after all, it is the intake of water, which most people ignore, that I think should be stressed.

DR. KEYSER, closing the discussion: The matter of urinary acidification merits a few further comments. Let me emphasize the point that the H-ion concentration of the urine from each kidney should be studied separately with the use of indwelling catheters. The urine from one kidney, especially if infected, may have an entirely different reaction from that of the opposite side. Hence a study of the bladder urine alone may be deceptive.

Again the danger of too intense or too long administration of acidifying drugs is hazardous as either systemic acidosis on the one hand or actual nephritis on the other can be produced. Even intense alkalization over prolonged periods may bring about renal damage or a state of chronic alkalosis with unpleasant consequences.

As for fluid intake, I agree with the discussants that

forcing water is probably a good measure for the prevention of stone. I would emphasize, however, that the type of water, i. e., whether it is soft or hard does not seem a matter of great moment. Throughout history the effort has been made to link the etiology of stone with hard water. Yet the geographic incidence of stone does not bear out such an association. For instance, in Southwest Virginia, a limestone district, stone is not high in incidence, whereas in Florida, a region where the water is soft and the diet highly alkaline, calculus is relatively frequent.

As for dissolution of stone, I am quite in accord with the opinion expressed by Dr. B. H. Hager in a letter to the Urologists Correspondence Club. He states, "I should like to know how many members of our correspondence club have witnessed the disintegration of true, formed calculi. By this I mean solid stone made up of layers of concentric rings or laminations. It is my opinion that

most if not all instances of spontaneous disintegration of kidney or bladder stones have occurred with soft stones or putty-like stones. They are composed chiefly of calcium magnesium phosphates and as far as renal stones are concerned represent a small minority. They often cast a very excellent shadow in the roentgenogram. The best examples are those found in the bladder. They are readily picked to pieces with a specimen forceps and are really not stones. I have often marvelled at the softness of these concretions in spite of their marked opacity to the roentgen ray. Such calculi do not dissolve, they merely disintegrate."

Indeed we are yet far from an understanding of the stone problem. However, each year brings a new group of observations, both clinical and experimental, from zealous workers in the field of research. It is not too much to expect that the knowledge derived from these observations will ultimately be fruitful.

APPENDICITIS: ITS DIAGNOSIS AND IMPROVED METHODS OF TREATMENT.*

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The importance of appendicitis is attested by its frequent incidence and its high mortality. It is a disease that can be promptly and satisfactorily cured by an early operation. A competently performed operation within the first few hours of the disease should result in almost no fatality. As it is, however, the mortality rate in the last census of the United States, which was for the year 1935, was 12.7 per 100,000 population, or 16,142 deaths. In Virginia, the death rate per hundred thousand population in the same year was 10.1, or 247 deaths. This rate has steadily increased, as shown by the fact that in 1913 the death rate per hundred thousand in Virginia was 6.4, or 137 deaths from appendicitis.

The late Dr. Murat Willis, in 1925, stated: "It is appalling to realize that the annual deaths from appendicitis equal all from salpingitis, pelvic abscess, surgical diseases of the pancreas, spleen, thyroid, gallstones and ectopic pregnancy. The annual toll taken by appendicitis almost equals the combined total of intestinal obstruction, gallstones and gastric and duodenal ulcer."

When we consider the splendid results following competent surgical treatment of appendicitis, it becomes necessary to emphasize not only early diagnosis but the treatment of this disease.

The symptoms of typical appendicitis are classical and make the diagnosis of such cases, which constitute the majority, relatively easy. Pain begins in the epigastrium or around the navel, comes on rather suddenly, is somewhat diffuse, and then settles in the right iliac fossa where the tenderness and muscle spasm are most pronounced. With the appendix in its usual location, this greatest point of tenderness is about McBurney's point, halfway between the anterior-superior spine of the ilium and the navel. Often there is nausea and sometimes vomiting, but usually there is no elevation of temperature in the early stages and the pulse is but little accelerated. As a rule, but not always, the white cell count is elevated, and a differential shows increased polymorphonuclears. A Schilling blood count may be helpful in showing a shift to the left when the white cell count seems otherwise normal. But these test may not be conspicuous in the early stages of appendicitis. As the disease progresses, a more rapid pulse with a rising temperature usually occurs. Then the white cell count may be elevated,

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Read before the 68th Annual Session of the Medical Society of Virginia, at Roanoke, October 12-14, 1937.

and the Schilling shift may be valuable, especially in children. However, any one who demands all of these symptoms or even a majority of them in every case will undoubtedly miss many diagnoses. Not infrequently the physical signs of pain and muscle spasm are present without any other change. The previous history is often illuminating, particularly if there have been spells of so-called "indigestion", stomach trouble, and general discomfort and slight pain in the lower abdomen.

Hertzler has very wittily asked why it is that, while the appendix may vary in its anatomical position anywhere from the under surface of the liver to the lower left abdomen or the cul-de-sac, the pain is always at McBurney's point? His answer is, "It is not". Too frequently a diagnosis of appendicitis is excluded because of the absence of many of the so-called typical symptoms and signs,—and too frequently a catastrophe follows.

As is well known, different individuals react differently from the same stimulus. There is undoubtedly, as Walter Hughson has demonstrated, a pylorospasm that may be induced in some persons by irritation anywhere in the peritoneal cavity. He has shown in dogs that cauterizing the cecum may produce a pylorospasm and slow the emptying of the stomach, which returns to normal when the gastric vagus nerves are cut. We have had some cases of appendicitis in which there was definite pylorospasm and hunger pain relieved by food, and a few in which roentgenologic examination, while it did not disclose a filling defect, was suggestive of a duodenal lesion because of the spasm, and in which the removal of a diseased appendix produced a cure.

These exceptional cases, however, should not constitute a license for removal of the appendix after vague abdominal symptoms unless the case has been thoroughly studied, but they are mentioned to show that the physician who first sees a patient suffering abdominal pain should have a catholicity of view and keep an open mind until a probable diagnosis has been established.

One of the most frequent variations from normal is pelvic appendicitis. Harold Brunn, of San Francisco, has called attention to this, and comments upon the symptoms of the condition. Brunn quotes A. R. Short, from the *British Medical Journal*, who, in speaking of appendicitis, says, "Difficulty in the diagnosis is caused by the pelvic appendix, both in children and adults. In the great majority of un-

recognized and fatal cases of appendicitis, the appendix is of this type."

Pelvic appendicitis almost constitutes a clinical entity, as Brunn has insisted. Pain may be sudden and sharp, as in ordinary appendicitis, then it may become less marked. When the patient is first examined, however, usually there is no point of tenderness, and no muscle spasm. If the appendix is well down in the pelvis a rectal examination will disclose tenderness, especially with the finger high up in the rectum. Not infrequently these patients may have a constant desire to defecate, and there may be a diarrhea. Because of the adherence of the appendix to the bladder there may be frequency of urination, and the urine may actually contain some blood cells and leukocytes. The temperature is often about normal. When the pain can be localized it occurs as frequently on the left side as on the right. As the disease progresses the white blood cell count will usually increase. If the pain eases off after the first attack, the temperature is normal and the belly soft, with an absence of tenderness and rigidity at first, and often on the left side when it does occur, the clinical picture is very confusing.

In women pelvic appendicitis may be confused with salpingitis or a ruptured graafian follicle. A stone in the ureter must be differentiated, because often pelvic appendicitis will produce urinary symptoms and even pain in the penis.

The clinical examination in the early stage is extremely important. In these cases of pelvic appendicitis, because of the lack of typical symptoms, the attending physician is prone to keep the patient for observation until the appendix has actually ruptured.

In a recent patient of ours, the pain began immediately over the pubic region and the patient associated it with the menstrual period which was due and so she did not call a physician. There was no nausea or emesis. The pain continued above the pubis, and the following day there was also some pain in the left lower quadrant. This continued for another day, when the abdomen became distended and there was some tenderness in the right lower quadrant. The patient's temperature and pulse rate had remained about normal throughout. Examination on the third day after the first symptoms showed moderate distention and increased muscle tone throughout the abdomen. There was pain with muscle spasm in the right and left lower

quadrants, but somewhat more pronounced on the left. The white blood cell count was 10,750, with polymorphonuclears 85 per cent. The temperature was 99.2, and pulse 104. An immediate operation was done, and the appendix was removed. It had several perforations and was completely gangrenous. It was deep in the pelvis. There was spreading peritonitis. The patient's recovery was stormy at first but was eventually satisfactory.

At St. Elizabeth's Hospital we make a practice of operating upon every case of acute appendicitis or peritonitis from acute appendicitis as soon as the diagnosis is made. This, of course, simplifies matters so far as statistics are concerned, for all of our cases are included among those operated upon. If the operation is done at any stage gently and carefully, through a muscle-splitting incision, we believe the patient stands a better chance of recovery than if there is delay.

Peritonitis from salpingitis tends to be limited and differs greatly from peritonitis from a perforation in the gastro-intestinal tract, because salpingitis is usually caused by the gonococcus, whereas peritonitis from perforation of the gastro-intestinal tract is from the colon bacillus and some strains of streptococcus. The habits and reactions of gonococci are quite different from those of streptococci and colon bacilli. It has long been known that perforation of a peptic ulcer of the stomach or duodenum should be operated upon as soon as possible. The mortality rate from this perforation increases with the delay of operation, until after forty-eight hours practically all of the patients with freely perforating peptic ulcers die, whereas operation in the first few hours has a comparatively small mortality rate and drainage is not even necessary. In the stomach and duodenum the bacterial content is low, and it would seem much more important to close a perforation in the lower intestinal tract where bacteria are virulent and abundant. An appendicular abscess or peritonitis is from a perforation of the gastro-intestinal tract, as the appendix has been perforated either grossly or because of gangrene which permits bacteria to escape.

To be sure, patients do not die in the first eight or nine hours of peritonitis, but they may acquire an infection during this time which will inevitably be fatal after one or two days, when nothing can be done.

When there is peritonitis or an abscess from ap-

pendicitis, and drainage is necessary, the peritoneum is sutured with catgut up to the drain, but the rest of the wound is left open and packed with vaseline gauze for several days. With a McBurney incision the healing is better with this method than if more sutures were placed as the septic matter tends to pocket.

After an appendectomy, when the wound is closed, the patient is kept at rest in bed for eight or ten days. This would seem a minimum time for the wounds, both in the intestine and in the abdominal wall, to heal. Patients can, of course, get out of bed earlier than this, and in many instances no harm will come, but it is unphysiologic to expect a wound in the intestine and in the abdominal wall to heal firmly in less than eight or ten days, and the principle of rest is as important here as elsewhere. If there is drainage, naturally the residence in bed will be longer, depending upon the condition of the patient.

One of us (Dr. Guy W. Horsley) published a summary of cases operated upon at St. Elizabeth's Hospital, Richmond, for appendicitis from January 1, 1931, to January 1, 1935. This report did not include appendectomies which were incidental to some other operation. The summary showed 502 patients were operated upon, with four deaths. Since that report, and up to September 1, 1937, there have been 256 additional cases with one death, making a total of 758 cases and five deaths, a mortality rate of 0.66 per cent. These cases are classified as follows:

APPENDECTOMIES AT ST. ELIZABETH'S HOSPITAL
JANUARY 1, 1931, TO SEPTEMBER 1, 1937.

| | Cases | Deaths | Per- centage |
|-------------------------------------|-----------|---------|-----------------|
| Acute appendicitis | 470 | 3 | 0.64 |
| Acute appendicitis with peritonitis | 95 | 2 | 2.13 |
| Subacute and chronic appendicitis.. | 192 | 0 | 0 |
| Carcinoma of appendix | 1 | 0 | 0 |
| | <hr/> 758 | <hr/> 5 | <hr/> 0.66 |

(During the month of September there were ten cases of appendicitis, with no mortality. This brings the total number of cases to 768, with five deaths).

Of the five deaths, one was from pulmonary embolus when the patient was about to leave the hospital. The patient had had a gangrenous appendix and was apparently in good condition following the operation. The second death was of a man seventy-two years of age who had a retrocecal

appendiceal abscess. He died from pulmonary edema with a decompensating heart five days after the operation. The third fatal case was a woman thirty-four years of age who had acute appendicitis, and the appendix was removed; and there was also an abscess about the left tube adherent to the ileum, but not associated with the appendicitis. The abscess was drained and part of the ileum resected. The patient died five days after operation from intestinal obstruction and localized peritonitis on the left side. The fourth fatal case was a woman seventeen years of age who had been delivered normally three weeks previously and had complained of pain in her right side for four days. There was marked evidence of pyelitis. At operation there were a ruptured appendix and peritonitis, and three feet of gangrenous bowel. The appendix and the segment of bowel were removed. The patient died eight days later of peritonitis. The fifth death was in a man who was a chronic alcoholic with bad liver and kidneys, and was very fat. The appendix was removed. The patient developed paralytic ileus and uremia, and died on the sixth post-operative day. Necropsy showed no peritonitis.

In none of these fatal cases was the peritonitis caused solely by the appendix. There were two deaths in cases in which resection of the bowel was done.

There are five important points which we practice in the treatment of appendicitis:

1. Operate at any stage, whether peritonitis or abscess is present or not, as soon as the diagnosis is made.

2. Use the McBurney incision, be as gentle as possible in the manipulations, and always remove the appendix even if bound down in an abscess. We have not failed to remove the appendix in the last eleven years.

3. No sponging or packing of gauze around a septic appendix with an abscess or peritonitis. Suction, however, is freely employed. Sponging with gauze tends to force septic products into the loose tissues around the posterior peritoneum and promotes sepsis, whereas suction draws the septic products out.

4. The stump of the appendix is treated as simply as possible, merely ligating it, severing the appendix with the electric cautery, and cauterizing the stump with pure carbolic. The ends of the ligature on the stump of the appendix may be

threaded in a needle and passed through adjacent peritoneum-covered fat to protect the stump from the drainage tube or to hasten the absorption of the stump, but no suture is placed in the cecum. H. E. Robertson, Chief Pathologist of the Mayo Clinic, said some time ago in a personal communication, "... for a long time I have been, in season and out of season, inveighing against the custom of burying the stump of the amputated appendix. It strikes me as wholly illogical and, worse than that, a dangerous procedure. The well-known ostrich with his head in the sand hasn't very much on this custom."

5. The cecum and colon are given physiologic rest. This cannot be accomplished by enemas or proctoclysis, which add a burden to the colon. The patient is supplied with water, the electrolytes and some calories by the continuous intravenous injection of 5 per cent dextrose in Ringer's solution.

In the market now are all glass containers which have this dextrose and Ringer's solution already mixed, and they are very satisfactory. Under no circumstances should the "drip" apparatus be used in the intravenous injection. It is difficult to understand why this was carried over from proctoclysis. The "drip" apparatus in intravenous injections is not only unnecessary, but it is dangerous, because when the patient strains as in vomiting the flow is blocked temporarily, and the air in the "drip" is compressed, while later the intravenous flow may be absorbed more rapidly and air sucked over from the "drip". The use of this drip apparatus probably explains the rather high incidence of pulmonary embolism that follows such continuous intravenous injections, of which there has been some complaint from other clinics.

We believe that it is the combination of these factors that gives a good result. Some of these procedures, as the McBurney incision, prompt operation and simple treatment of the stump of the appendix, we have employed for many years, but these combined with the use of suction instead of sponging and intravenous dextrose in Ringer's solution instead of proctoclysis we have practiced since 1930, and this combination as a whole seems to be more adequate than any one or more of these factors taken separately. Unless suction and intravenous dextrose in Ringer's solution are used, immediate operation in the presence of spreading peritonitis or the removal of the appendix in each case might be un-

wise, but with this combination it seems to be satisfactory.

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DISCUSSION

DR. A. S. BRINKLEY, Richmond: From the number of contributions to the literature on the subject of appendicitis within the last twenty-five years, it would seem that there would be very little left to be said about it. However, when one pauses to consider that the mortality rate, instead of decreasing, has increased within that period, I think Dr. Horsley's paper is most timely.

These unusual cases, with vague symptoms, described by Dr. Horsley in his paper, are the ones we have trouble with, especially the pelvic type and also when the appendix is up under the liver in the region of the gall-bladder.

I have a patient in the hospital now—a girl fourteen years of age—who gave a history of pain low down in the right pelvic region of a little over twenty-four hours' duration; no nausea or vomiting, diarrhea, or constipation; no history of previous attacks. She was observed by her family physician at home in the country for twenty-four hours and when her condition showed no improvement she was sent to the hospital.

On admission, her temperature was 100, pulse 80, respiration 20, leucocytes 10,000, Polys 80, menstrual history normal. There was just a slight amount of tenderness on deep pressure over the right pelvic brim and a little muscle spasm in this area. She was prepared for immediate operation and a gangrenous appendix was found adherent to the under surface of the right broad ligament and much care had to be exercised to keep from rupturing it during removal.

There should not be any trouble about making a decision with a classical case of appendicitis but these unusual cases with vague symptoms will often give us much concern. They should be carefully considered and operated upon promptly, if reasonably sure of the diagnosis, to avoid rupture and its resulting consequences.

In reference to Dr. Horsley's statements as to the management of these cases, they coincide with mine, with a few exceptions. I still use the low gravity or flush method of proctoclysis. This consists of an ordinary irrigating can, a three-foot piece of rubber tubing, hard rubber douche nozzle, and a stop-cock for the tubing. The can should be placed at such a height as to insure an automatic outflow of gas from the colon to the can and an inflow of normal saline from the can to the colon.

I am convinced that these patients are made much more comfortable by using this method of proctoclysis and I

have had no reason to discontinue its use. I discarded the Murphy drip many years ago because it adds materially to the patient's discomfort. Dr. Horsley may have his reasons for not using any type of proctoclysis.

In reference to treatment of the stump: I trained in a hospital where they were much at odds in the treatment of the stump. During the two years of my training in this hospital, I had occasion to study these cases very carefully and my observation was that those cases on whom the simple treatment of the stump had been used did much better than the others.

During these two years we had two cases of fecal fistula to develop in perfectly clean cases where the so-called burying of the stump method was used. One was a sixteen-year-old girl who happened to be on my floor and I dressed her daily for about seven weeks; she recovered. The other was a man about thirty-five. They were somewhat late in opening him up and he died very promptly. Any unnecessarily complicated procedure in an operation always makes it worse for the patient and I can see no real excuse for burying the stump of the appendix.

I have used the simple ligature method of treatment of the stump for years and have never had any reason for changing. I discovered one day when I applied the clamp first, then ligated at the base, that there was a considerable amount of debris sprayed around on the sheets when the appendix was severed between; so now I ligate at the base first and strip out all the debris from the ligature back in the lumen toward the tip before severing between the ligature and forceps.

I enjoyed hearing Dr. Horsley's paper very much indeed.

DR. CARRINGTON WILLIAMS, Richmond: There are several points about Dr. Horsley's paper with which I do not agree, but I will discuss first several other points on which we are in complete accord.

The early diagnosis is of course the most important factor and this diagnosis is not always easy. Patients with acute appendicitis can have normal temperature; they can have normal leucocyte count; they can have absence of nausea and vomiting and I have seen one patient who had no abdominal pain. I agree with Dr. Horsley that the McBurney incision is the best one to make for acute appendicitis. I also agree with him that immediate operation should be done in all cases with one qualification, that there are certain abscesses which are better treated by a slight delay.

When one is presented with a group of statistics, it is important to analyze them in an effort to find out why these statistics are good or bad. I believe that there are two good reasons for the excellent record which Dr. Horsley has presented. The first is that these operations are skillfully done at St. Elizabeth's Hospital. The second reason is that the private hospitals in Richmond enjoy a situation which does not exist in any other part of the State. The best class of patients in our community and surrounding territory go to private hospitals, and these are the patients who are treated early. The lower classes who are notorious for their delay in seeking medical advice

go to the general hospitals. I am sure that the other private hospitals in Richmond can duplicate the results which Dr. Horsley has presented. As a matter of fact Dr. Johns recently reported the experience of the Johnston-Willis Hospital at the Richmond Academy of Medicine and his mortality rate was a little lower than the one Dr. Horsley has reported.

In regard to intravenous fluids, I of course agree that the severe cases need it: the vast majority of them, however, will make a perfectly smooth convalescence without intravenous injections.

I do not think it makes any difference whether the stump of the appendix is tucked into the cecum or left out; the important thing is to do the operation skillfully. Personally, I think it is simpler and easier to tuck the stump through a purse string suture instead of going through the necessary effort to sterilize the stump and leave it out. I do not believe there are as many complications where the stump is tucked in, as there are if it is left out. Private hospitals in Richmond should be proud of their record for treating acute appendicitis but at the same time it should be remembered we have a preferred clientele.

DR. C. C. SMITH, Norfolk: Whenever I see an appendiceal stump ligated and dropped back I cannot but recall how much fuss was made in my interne days when the stump slipped out of the forcep before it was covered over. Soon after this I saw a surgeon of experience merely ligate the base, cut off the appendix and drop back the stump without treatment with cautery or chemicals and the patient did nicely. It has been my custom for a long time to use a purse string and tuck in the stump; recently I have reluctantly abandoned this and, because it is a little easier, I have been merely ligating and using carbolic on the stump. The patients seem to do just as well.

DR. R. DUVAL JONES, Norfolk: The subject has been pretty thoroughly covered. I wish to express my appreciation of Dr. Horsley's paper and to mention one or two points. I approve the McBurney incision. Secondly, there is a principle which Dr. Payne and I have employed since I have been with him, in treating cases where nature has built up some kind of a wall. We make no attempt to tie off the mesentery to the stump, but simply apply clamps and leave them for twenty-four to thirty-six hours. We feel that has been in a number of cases life-saving. One other point was the intravenous solutions in the treatment of peritonitis. It is a wonderful procedure, but particularly where it is hooked up with continuous gastric drainage we have to watch the blood chlorides, because with a continuous loss of gastric juices there will be a reduction of electrolytes.

DR. H. M. HAYTER, Abingdon: We do not have the advantages that those working in the larger centers do as so many of the cases which we see come from remote districts and have been sick for many days. When seen they show advanced peritonitis and are in no condition for immediate operation. These cases are treated, hoping to improve their condition. Many of these cases are lost, yet many improve, are operated upon and recover when at first the outlook seemed hopeless.

I cannot see that there has been any particular difference whether the stump of the appendix was inverted or covered over and dropped. My own preference is to invert the stump, first because I think it safer, and second, because of my early training.

DR. J. SHELTON HORSLEY, closing discussion: My two sons and I have gone over the published statistics of appendicitis, particularly the local published statistics, fairly thoroughly, and we have been unable to find statistics of treatment of all cases of appendicitis giving results as low as ours, that is, two-thirds of one per cent. It must be recalled that this represents every patient with appendicitis that we have seen professionally. We operate upon every case of acute appendicitis, no matter at what stage, whether there is peritonitis or not, just as soon as the diagnosis is made. Naturally, if one does not operate on the very ill cases, and calls them moribund and does not include them in the statistics, it will be possible to have a low mortality rate of operative cases of appendicitis by excluding those that are supposed to be moribund and are treated solely by the Ochsner method. However, a patient is just as dead if he dies of peritonitis without an operation as he is if he died following operation, and I think the only accurate method of obtaining statistics of the death rate of appendicitis is to count every patient the surgeon sees or treats, no matter by what means.

We have had five deaths in 768 consecutive cases. These deaths have been discussed in the paper, and the discussion need not be repeated here, but it might be well to call attention to the fact that no one of these deaths resulted from peritonitis solely from the appendix. In the two cases in which peritonitis caused death it was because the cases had been neglected and resection of the bowel in addition to the appendectomy had to be done.

Our patients are all operated upon by members of our staff, and not by interns or residents. This point which Dr. Carrington Williams has made is, I think, one of the elements of importance in reducing the mortality rate, though not the only element.

In regard to the technic of treating the stump of the appendix, this has been described in the body of the paper and the reasons for adopting the simple treatment have been elaborated there and elsewhere. As for Dr. Carrington Williams' advocacy of a method by which the appendix is cut off flush with the cecum and the wound sutured, it seems that this is a much more complicated technic. Nothing could be simpler and freer from sepsis than merely tying a string around the base of the appendix, cutting off the appendix with the cautery after protecting the cecum with moist gauze, and then disinfecting the stump. The appendix should not be clamped where it is to be tied because this produces a crushed band of tissue and the ligature brings together this crushed tissue with unnecessarily injured mucosa. When merely a ligature is tied around the base of the appendix, the only traumatized tissue is that within the grasp of the ligature. If, however, the technic suggested by Dr. Williams is followed and the appendix is severed with a knife flush with the cecum, the knife passes through septic material which

may be spread over the surface of the bowel. If a cautery is used, the cecum may be burned. It will be necessary to suture the mucosa of the cecum, which is of course septic, and the suture may smear sepsis around. Then, too, another row of sutures must be placed to bury the sutures in the mucosa.

The points about giving physiologic rest by administering intravenous dextrose in Ringer's solution and not using enemas have been discussed in the paper.

It seems to us that 768 consecutive cases of appendicitis

with the five deaths that have been discussed is a sufficiently large series to lessen to some extent the element of luck. Many of these patients had spreading peritonitis, and in many of them there were appendicular abscesses. In no case have we failed to remove the appendix, whether an abscess existed or not, and thus we have apparently lowered the mortality rate and at the same time decreased the period of morbidity and eliminated the expense of a second operation with the attendant prolonged hospitalization.

SOME OBSERVATIONS ON MY EIGHT YEARS' EXPERIENCE IN A MODERN MENTAL HOSPITAL.*

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Solomon, in all his glory and buttressed by all his wisdom, could discern no new thing under the sun. But Solomon lived a thousand years before Christ! Had he lived in this twentieth century A. D., and particularly within the last few decades, he would never in this world have given utterance to such a thought. New things under the sun? Why they are as thick as autumnal leaves in Val-lombrosa! In our profession their name is legion. How mighty and how wonderful have some of them been looking to the weal of the race. Just a bird's-eye view reveals such things as radium; X-ray; antiseptics; antitoxins; violet rays; development of vaccine therapy and serum therapy; electro-cardiography, and so forth, almost to an unlimited extent,—every one of them making a new rung on the ladder by which the human race seeks to climb to higher things.

And, let me add, these new things are not confined to discoveries and inventions of a curative nature only; they relate to methods as well. Do you realize that only a few years ago a hospital for the mentally sick was, abhorrent as it now seems to us, named and known as a *lunatic asylum*, and was so chartered by the legislatures of the States! Necessarily this very appellation had a depressing effect upon such patients as still possessed even a modicum of intelligence; such an effect as is indeed produced upon all of us when we hear of an institution for the unfortunate called Home for Incurables! Fortunately, due to the efforts of psychiatrists and social workers especially, the term *lunatic asylum* has

been consigned to the limbo of the past. And thus came to pass one of the first changes in methods.

I have been on the medical staff of a State hospital for eight years and I have, necessarily, come into intimate contact with mental cases of all kinds. We have about 1,200 patients at the present time; almost equally divided between the sexes. And during this comparatively short time, what advancement has been made! Man's indefatigable efforts have resulted in making the patients more comfortable and more contented, and the goal of ultimate recovery in many classes is no longer a mere hopeless "will-o'-the-wisp." The old idea, that certainly at one time existed, of putting a patient away in order to control him and at the same time protect his family and the public, is a thing of the past. The modern hospital for the mentally ill is not willing to merely mark time; it is now an institution of research, of study, of action: it insists on results. And in order to achieve results, it is equipped with all the latest appliances, instruments and facilities utilizable in the task of mending the patient's body and healing his mind. A comparison of such modern hospital with the old lunatic asylum would shock you: you would indeed wonder why so many things were so long hid.

Of course you realize without any elaboration by me that infinite pains and tremendous detail are involved in properly organizing and carrying on the work of such an institution. Topsy may have "jest grow'd," but the only thing that just naturally grows about a hospital of the character described is the incessant stream of unfortunates that gravi-

*Read before the Southwestern Virginia Medical Society, September 3, 1937.

tates to its gates: all else is unremitting toil, eternal vigilance, and the exercise of certainly a fair amount of intelligence.

In order that everything may be done for the patient with promptness, exactitude and efficiency, the hospital has a medical and surgical department; a department of psychology; an X-ray department, diagnostic and treatment; clinical laboratory, well-equipped with all modern facilities, with well-trained technician in charge; dental department complete with X-ray; physio-therapy; occupational therapy, and recreation and social service departments.

Mental disorders, as of course everyone knows, come from a great variety of causes. There are the predisposing causes: heredity, birth-trammas, syphilis, both congenital and acquired, organic brain lesions, pellagra, brain tumors, circulatory disturbances; and then the exciting causes: alcohol, drugs, puerperal sepsis, certain infections, religious zeal and fervor, constitutional upsets, scholastic disappointments, marital incompatability, disappointments in love, *et cetera*.

When a patient enters a hospital for the mentally ill, he is, pursuant to an adopted policy, subjected to a complete physical examination. These are routine, namely: physical, neurological, dental, blood studies, including Wassermann, and urinalysis; and special investigations are made as indicated in order to determine what organic disease, if any, exists. We have for this the X-ray, including gastrointestinal series, stereoscopic cranial and chest plates; also of the spine, fluoroscopy, kidney function (dye test), renal fixation, basal metabolism, ophthalmoscopy, cystoscopy, *et cetera*.

After all essential data relating to the patient has been carefully compiled, mental studies are made, including tests to determine the degree of intelligence of the patient. In short, everything is done to ascertain the mental and physical picture of the patient, and then application of such knowledge in order to rescue the darkened mind from its plight is persistently pursued. Our high goal, of course, is to once more have a human being with a sound mind in a sound body.

Bear in mind that mental disorders do not, as a rule, come alone; there is scarcely a disease that we do not, at one time or another, have to combat. We have our gall-bladder cases; appendicitis; per-

forated ulcers; diabetes; nephritis; pelvic infections; influenza; heart diseases of every kind; luetic infections; pellagra, tuberculosis, and what not. And we even have obstetrical cases now and then upon the admission of new female patients. Of course there are many dislocations, fractures, and wounds; and we have our neurotics and our psychoses. In passing, I might remark that some patients react to all sorts and kinds of hallucinations and are possessed of all sorts of delusions. Some of them would be vastly amusing were they not so serious, so tragic. We recently admitted a patient to our criminal department—a general paretic, hopelessly insane—who has almost incredible delusions. He believes, in his darkened mind, that all types of fish, lizards, crocodiles, monkeys, snakes, and even elephants find their habitat in his abdomen!

I might also state that in excited cases we have, in large measure, abandoned the use of narcotics, such as morphine and hyoscine, and substituted in their stead physio-therapy among other things. Physio-therapy, for instance, brings about rest and relaxation; induces a more restful and refreshing sleep, thus assisting in bringing about a recovery. In doing away with narcotics as far as expedient, we do not of course subscribe literally to the dictum of Dr. Oliver Wendell Holmes. He once told the Harvard Medical School: "I firmly believe that if the whole materia medica could be sunk to the bottom of the sea, it would be all the better for mankind and all the worse for fishes."

Many, very many of the cases of insanity that come to us are caused by luetic infection. It is most gratifying to note the determined campaign that is now at last being made on that great American scourge, and it is particularly gratifying to note that the *corpus delicti*, as the lawyers would say, has been pitilessly dragged out into the open. For years syphilis has been a tabooed subject in the life of Americans; and for this prudery we have suffered much. There has been a progressive increase in the number of patients suffering with this loathsome and deadly disease, admitted to the hospital, where I am assistant physician. We have more patients right now victims of syphilis than at any other period in the history of the hospital. It is our aim to treat such cases for at least a year or more. We begin the treatment as soon as possible, giving from twenty-five to thirty injections of neoarsphenamine,

six to nine Gms. per dose, intravenously, alternating with courses of tryparsamide and different bismuth preparations. In the case of our elderly patients suffering from effects of central nervous syphilis we feel a hesitancy in giving any intravenous medication for fear of breaking down any resistance they might have established.

Results obtained by us are not as gratifying as we would like for the reason that most of the cases admitted give a history of syphilis of long-standing. Were these cases properly treated and the patient given proper advice at the inception of the infection, they could have been cured, but, unfortunately, too often this is not done. The picture presented to us week by week is sad and the situation not only is deplorable but intolerable. Here we have a young man, once fine-looking, of splendid heritage, college-bred, it may be; he develops an ulcer on the glans penis, or a sore on his lip or tongue. For obvious reasons, he doesn't go to the family physician, but calls on another in some other town or county. This physician examines the young man, but, sad to relate, too often does not make a dark-field examination or a serological examination. Instead he tells him there is nothing to worry about, and he gives him some sort of medicated salve, or he cauterizes the ulcer, and assures him that he will soon be all right. It is true that the ulcer apparently heals in a few days, and the young man goes on with his daily routine entirely unconscious of the fact that there is a smouldering volcano locked up in his system. He gets married, and, alas, perhaps becomes the father of children, and then, after a while, something happens. He doesn't feel right, has headaches, becomes irritable, develops mental fatigue, then ocular symptoms, the pupils becoming unequal and irregular and reacting sluggishly to light. Other focal symptoms develop—scanning of speech, disturbance in station and gait, and then, at last, the volcano erupts. He becomes violent, and has to be taken away from a once happy home to become an inmate of a mental institution. And how easy it could all have been avoided had the examining physician done his duty! How easy for him to have sent, at a cost of three cents in postage, a sample of the young man's blood to the State Board of Health! Let's all make this solemn pledge that from now on we will, one and all, conscientiously

examine and advise all such cases, for only in that way will the scourge be diminished or curtailed.

So much has been said on this subject as to its origin, prevalence and treatment that I shall not presume to pursue the subject further. I have attempted to give you an insight of the pitiable spectacle that I see occurring day by day, and all because some one neglected to do his duty. Undoubtedly Robert E. Lee was right: *Duty* is the sublimest word in the English language!

Another disease of increasing importance as presented to us is pellagra. The investigation which we have made of this disease leads to the conclusion that pellagra is not a separate entity, that it is not a disease within itself. On the other hand, we prefer to think of so-called pellagra "as a disease of exhaustion," an "exhaustion syndrome." Our findings substantiate such a theory. Due to achlorhydria and grave anemia, all such patients suffer, not from lack of a balanced diet, but their malnutrition is due to the two factors specified. Their food cannot be assimilated if imperfectly digested, and cannot be distributed by reason of impoverished blood and low hemoglobin content.

This theory is substantiated by the fact that children and adults of the same family, receiving the same diet, may not develop pellagra. If it were actually a disease, the entire family would be affected. We have had excellent results in the treatment of our pellagra cases, with permanent recovery to a large extent.

In addition to a well-balanced diet and dilute hydrochloric acid, we give daily for one month 10 cc. .3 of 1% solution of ferric and ammonium citrate intravenously.

I haven't the time, and I know you haven't the patience, for me to go into more detail concerning treatments at the Hospital. There is, however, one other subject that I wish to mention before closing.

In some minds the idea seems to have been conceived, and by many given credence, that the position of physician, surgeon, psychiatrist or psychologist at a State mental hospital is more or less a sinecure, generally filled by one who is lazy, incompetent or unprogressive, or else afraid of contacting the world in the matter of outside and general practice. Nothing is further from the truth, if you will believe one who is himself connected with such an institution. A lazy staff member? He wouldn't

for a moment be tolerated. His would ultimately be the fate which every drone around a beehive meets sooner or later—only, instead of being killed, he would be exiled. But even a lazy man would shake off his sloth when he observes the need all the time of the patients committed to his care. Some men's work is from sun to sun, it is true, but at a hospital the work of the staff is never done!

Neither would an incompetent member be tolerated. As I have indicated, at one time or another practically every known disease has to be treated, and incompetency has no place in such a hospital. And if he is unprogressive, not abreast of the times, he does not belong.

Afraid of contacting the world? Any physician who can assist in the treatment daily of some 1,200 patients, men and women, with 1,200 distinct dispositions and 1,200 different idiosyncrasies; men and women from every walk of life, some of high and some of low degree, some law-abiding and some criminal; such a man, do you ask, afraid to go out into the world and earn his living? I leave the answer to you.

It might be asked, then, why choose such hard, exacting and unremunerative work when the outside world is so full of promise and so lavish in rewards? There are various answers. One might say that the work has a peculiar fascination, in addition to the desire to be of service to his fellow

man—so badly treated by Fate. Another might say that he feels it his duty to stick to the less remunerative employment because he has trained and equipped himself as a specialist along that line and it would not be fair to quit; moreover, the world hates a quitter. Another, feeling that someone must do work of this nature, and having his heart in it, solemnly dedicates his life to help this more unfortunate and most helpless of all people.

Every physician in such employment realizes quite fully that big fees and great reputation are denied him, however able he might be. The State pays him enough to live on—no more, you may be sure; and he goes on his way serenely, disregarding of the temptations and opportunities of the outside world, imbued by a sense of duty, and determined to "carry on."

Someone has said that whoever could make two ears of corn, or two blades of grass to grow where one grew before, deserves the good will of all mankind. So we feel that in our humble service if we can restore one man and one woman to the bosom of his or her family, rehabilitated in mind and body, to once again lay the altar stones of a home, that sure foundation of all that is America and American, we have done a great thing—a thing that will give us pride in our work and ability to still further "carry on!"

A REPORT OF FIFTEEN UNDER-WEIGHT CASES TREATED WITH INSULIN AND DIETS.

J. TECUMSEH N. McCASTOR, B. S., M. D.,

and

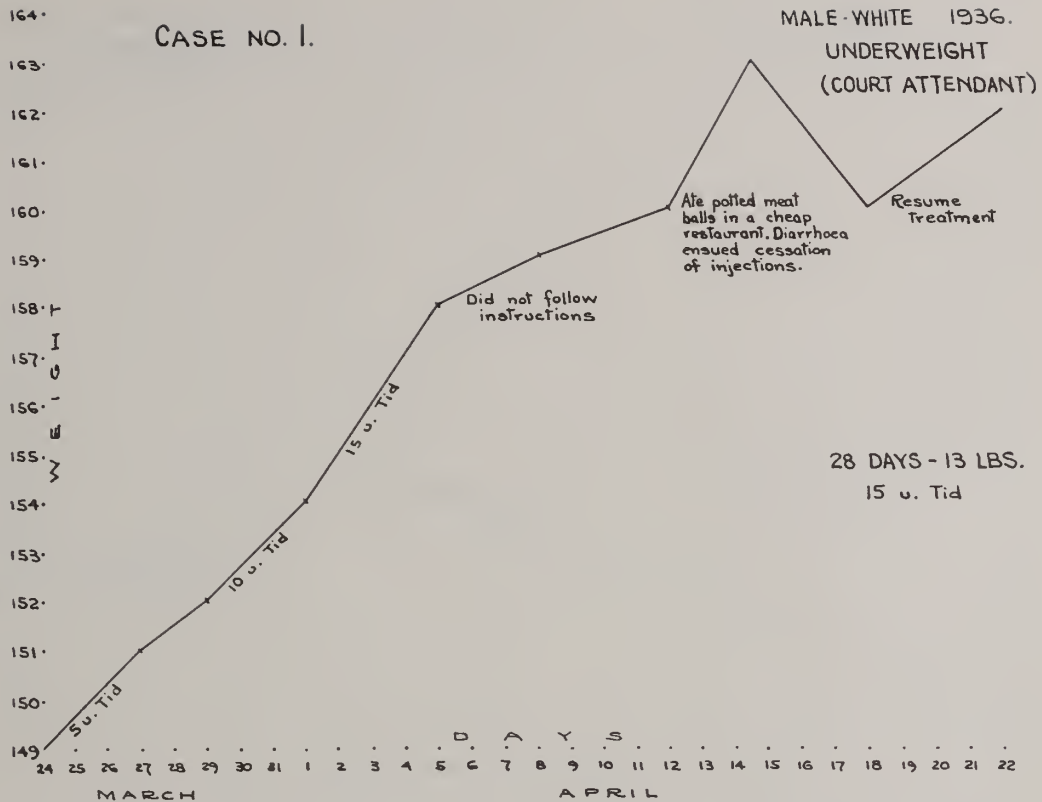
MARY COUSINS McCASTOR, B. S., M. D.,

New York City

Since March 24, 1936, we have treated a number of under-weight patients with excellent results. We are reporting the first series of fifteen cases, consisting of men and women ranging between twenty and thirty years of age. Apparently, insulin plus high caloric diets combined with vitamins is a safe and certain method of helping patients to gain weight.

The question will arise, no doubt, as to whether the cost of this type of treatment is worth while. In these cases, the weight problem was most important,

since all of the patients except two were applicants for Civil Service positions which had a minimum weight requirement. The trouble and cost of the treatment was negligible when one realizes that these patients were frustrated individuals, whose life efforts to win an appointment in desired occupations had been unsuccessful. The fate of their families as well as their own livelihood depended on "so many pounds of flesh", in as much as these patients had passed all of the necessary requirements except that of weight.



As previously stated, the patients were of both sexes, ranging from twenty to thirty years of age. The usual psychological concomitants of an unsatisfied, maladjusted individual were present. The typical patient in this group presented the picture of malnutrition—the long æsthenic type with visceroptosis and anemia. Gastrointestinal symptoms were most prevalent; nausea, constipation, flatulence, dizzy spells, lethargy, vague back and leg pains were listed by some of the group. Anorexia was also a common symptom, while others simply could not gain weight in spite of good appetites. All had tried various and sundry plans for weight gaining.

One female patient had been grievously constipated and had run the usual gamut of cathartics, this being one of the reasons for her first visit to our office. After one week of insulin and diet treatment she returned with an addition of six pounds, and happily reported that for the first time in her life she was not constipated.

Much emphasis was placed upon the importance of recognizing the environment-individual relationship. These patients were looking for a new hope—a renewed lease on life. Because of lack of a few pounds, they had been refused a life-long position,

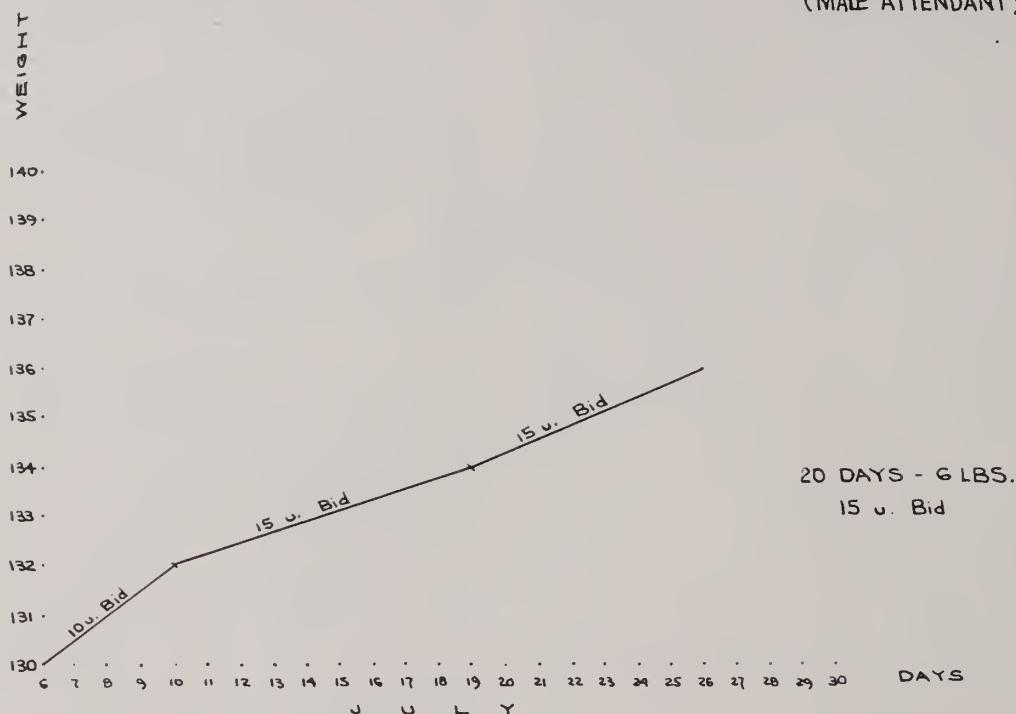
while unsuccessful attempts to gain weight had made hypochondriacal, skeptical and suspicious patients of them. At the outset, lack of cooperation with the doctor was often pronounced. It is here that the physician's personality and ability to establish *en rapport* with the patient is essential. These patients require much time and consideration.

During the first visit from our patient, we ascertained the exact number of pounds that he should weigh in order to meet the Civil Service requirement. After ruling out all contra-indications to insulin therapy, we proceeded to explain the exact procedure necessary for the patient to follow in order to acquire the required weight gain. Each was thoroughly instructed in the method of injecting and the care of the needle and syringe. He was explicitly informed of possible insulin shock and advised as to the procedure at the onset of symptoms suggesting hypoglycemia.

The initial dose of insulin was from five units to thirty units two or three times daily. Some who were employed found it impossible to take the mid-day injection. Each patient was given a diet sheet with instructions to keep a food diary. Additional vita-

CASE NO. 2

MALE - WHITE 1936.
 UNDERWEIGHT
 (MALE ATTENDANT)



mins were also given. The usual activities of the patients were in no way curtailed.

After three days, the patients were asked to return to us with a carefully written record of the medication and diets which they had taken. The purpose of this particular visit was to ascertain any changes, favorable or otherwise and to increase or diminish the insulin dosage according to indications. It also served to strengthen the personal contact between physician and patient.

Some members of this series continued throughout the treatment on fifteen units of insulin t.i.d. and attained the required weight, while others required larger doses. The maximum daily dosage was ninety (90) units.

The increase in weight varied from four (4) pounds in two (2) days to eighteen (18) pounds in twenty-two (22) days. All of the cases gained the number of pounds originally designated with the exception of two. These two were brothers, cases ten and eleven. They gained eleven (11) pounds in seventy-two (72) days, and fourteen and one-half ($14\frac{1}{2}$) pounds in one hundred and forty-four (144) days, respectively.

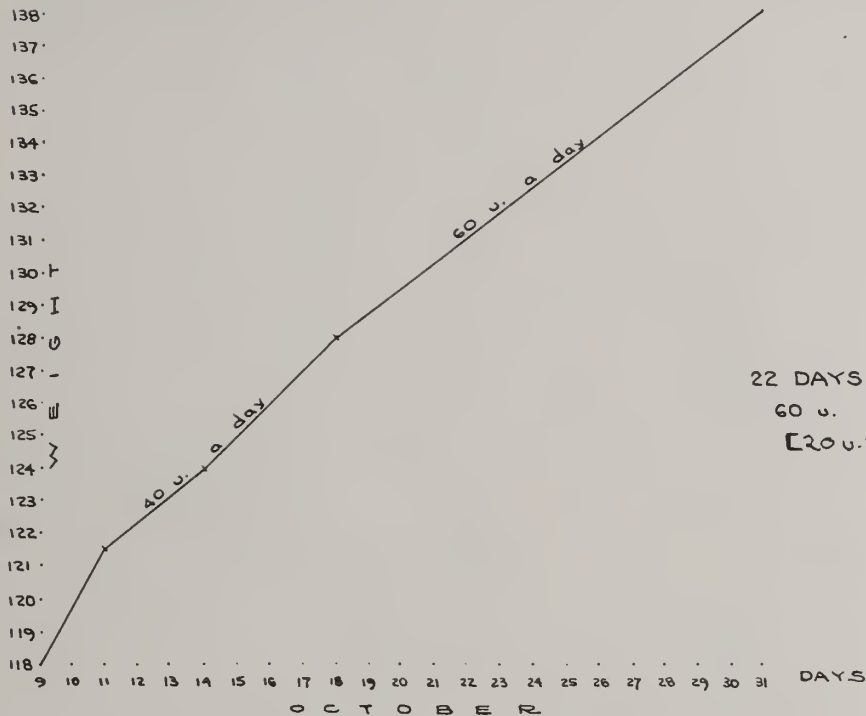
Striking changes were displayed in the patients in from three to five days after the initiation of treatment. The patient enters the office stating that he feels better, is more alive, more active and is not so easily fatigued. Objectively, the sunken cheek is fully rounded, the color is healthier, the eyes are more vivacious and a latent interest in his environment is awakened. The hypochondriac is no longer conscious of his "heart pain", backache, and fits of depression.

Reactions were both local and general. In four cases, about eleven o'clock in the morning the patients experienced subjective symptoms of nervousness and dizziness with a slight degree of nausea. This was soon eliminated by the taking of sugar at 10:00 A. M.

Local urticaria at site of injection was eradicated by changing the brand of insulin.

All but two of this series of patients were candidates for various Civil Service appointments in the city of New York. After the treatment, as outlined above, the required weights were attained and they were accepted by the commission and are now engaged in a gainful occupation.

CASE NO. 3

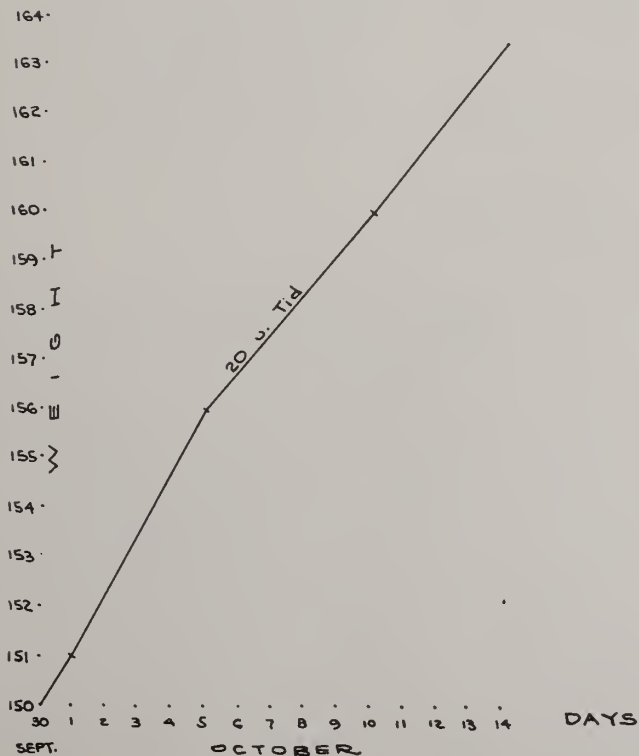
FEMALE - WHITE 21 YEARS
HEIGHT 5'-7½"

22 DAYS - 18 LBS.

60 u. P X day

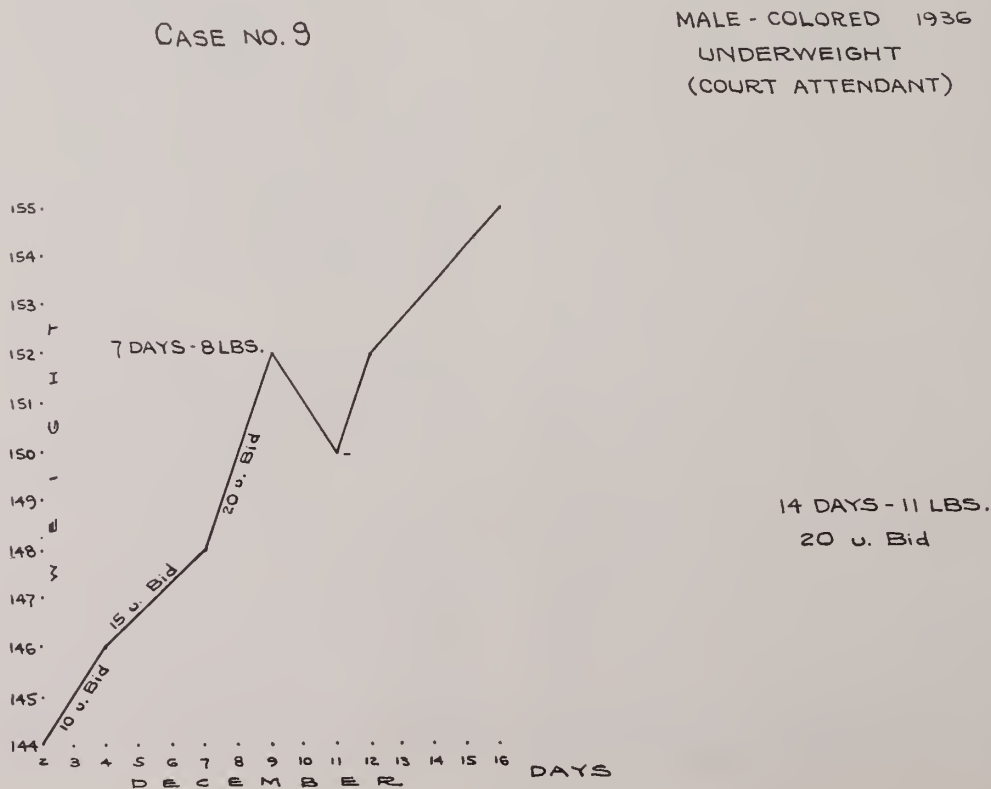
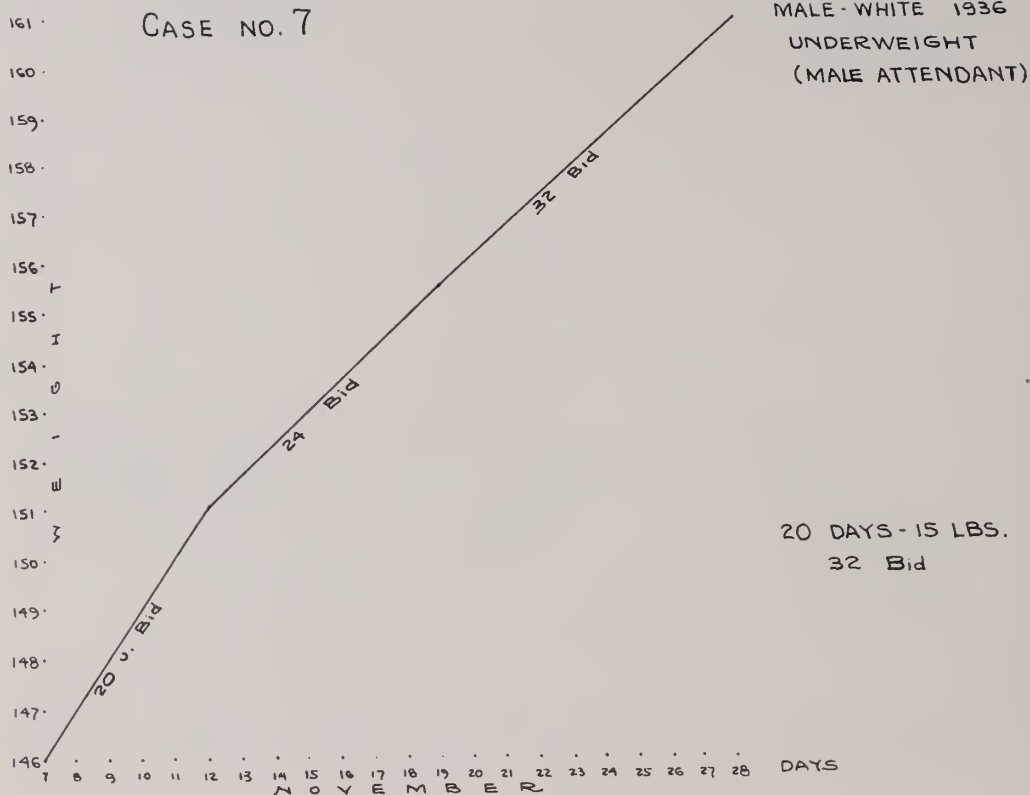
[20 u. T.i.d.]

CASE NO. 4

MALE - WHITE 1936
UNDERWEIGHT

13 DAYS - 13½ LBS.

20 u. Tid



| Case | Days | Gain in Pounds | Units of Insulin | Total Daily Units of Insulin | Jo. | 4 days | 6 lbs. | 1 lb. under— given extension, but has not re- turned for treat- ment. |
|------|------|----------------|------------------|------------------------------|------|---------|---------|---|
| 1 | 28 | 13 | 15 t.i.d. | 45 | | | | |
| 2 | 20 | 6 | 15 t.i.d. | 45 | | | | |
| 3 | 22 | 18 | 20 t.i.d. | 60 | | | | |
| 4 | 13 | 13½ | 20 t.i.d. | 60 | Ro. | 6 days | 2 lbs. | Needs 4 more lbs., but has not re- turned for treat- ment since Sep- tember 20, 1937. |
| 5 | 12 | 3½ | 10 b.i.d. | 20 | | | | |
| 6 | 6 | 9 | 30 once daily | 30 | | | | |
| 7 | 20 | 15 | 32 b.i.d. | 64 | | | | |
| 8 | 2 | 4 | 15 t.i.d. | 45 | | | | |
| 9 | 14 | 11 | 20 b.i.d. | 40 | McA. | 15 days | 16 lbs. | Needs 20 lbs. Still under treatment. |
| 10 | 72 | 11 | 30 b.i.d. | 60 | | | | |
| 11 | 144 | 14½ | 30 t.i.d. | 90 | Da. | 12 days | 7 lbs. | Met requirements |
| 12 | 29 | 14 | 20 t.i.d. | 60 | Ma. | 7 days | 6 lbs. | Needs 20 lbs. Still under treat- ment. |
| 13 | 5 | 8 | 25 t.i.d. | 75 | | | | |
| 14 | 89 | 12 | 20 t.i.d. | 60 | | | | |
| 15 | 16 | 8 | 25 b.i.d. | 50 | Do. | 3 days | 4 lbs. | Needs 1 more lb. |
| | | | | | Fre. | 19 days | 8 lbs. | Needs 7 lbs. more. Still under treat- ment. |
| | | | | | Ch. | 28 days | 6 lbs. | Patient only fol- lowed instructions for first 7 days, but has resumed treatment. |
| | | | | | Mo. | 8 days | 4 lbs. | |
| | | | | | Ke. | 11 days | 8 lbs. | Needs 7 more lbs. Still under treat- ment. |

Below is a summary of sixteen cases treated with insulin since date of the above report:

| Patient | No. of Days | Amount Gained | Remarks |
|---------|--------------|---------------|--|
| Is. | 24 days | 16½ lbs. | Met Requirements |
| Mu. | 11 days | 5 lbs. | Met Requirements |
| Vo. | 1 mo.-3 days | 12 lbs. | Met Requirements (and 1 mo. after stopping treatment, shows gain of 14 lbs.) |
| Ja. | 1 mo.-8 days | 12¼ lbs. | |
| He. | 3 days | 4 lbs. | Met Requirements |
| Cl. | 4 days | 4½ lbs. | ½ lb. under— given 3 weeks ex- tension. |

Six charts are shown, which are representative of the group.

57 West 57th Street.

THE TREATMENT OF CONGESTIVE HEART FAILURE.*

PAUL D. CAMP, M. D.,
Richmond, Virginia

Time does not permit me to cover in detail all of the various aspects of the treatment of congestive heart failure. I shall, therefore, dwell very briefly on several points, and try to emphasize the various methods used to induce diuresis in patients with heart failure. When the heart is unable to maintain a satisfactory circulation, a condition of stasis or congestion develops. When this condition of stasis or congestion reaches the point where it causes symptoms or signs, the condition is called congestive failure. The cardinal symptom of congestive failure is dyspnea or shortness of breath. In the beginning a fair amount of exertion may

bring on dyspnea; as the disease progresses dyspnea may be present without effort and, finally, the patient will have to sit nearly upright in order to get enough air. The congestion may show itself primarily at the base of the lungs, the right usually first. At times the congestion reveals itself first as pitting edema of the feet and ankles. The main congestion may occur first in the abdominal cavity, resulting in an enlarged liver and free abdominal fluid. If the condition progresses, we get the familiar picture of generalized dropsy.

In congestive heart failure, as in practically every type of disease, it is important to put the diseased organ as nearly as possible at complete physiological rest. The best way to approach this ideal in patients

*Read before the Southside Virginia Medical Association at Franklin, Va., March 9, 1937.

with heart failure is to put the patient to bed. He should be propped up with pillows if he experiences difficulty in breathing while flat. If the patient is still unable to breath comfortably when propped up, he may be allowed to sit in a chair by his bed. In severe failure absolute rest is indicated. By absolute rest we mean the following: the patient must not be allowed to move an arm or a leg, nor to go to the toilet; someone must feed the patient and move him about the bed as necessary. In less severe cases bed rest, but not absolute rest, is indicated. Such rest alone may improve the circulation so that a very good diuresis may occur.

A patient with a severe congestive failure often cannot sleep because of his uncomfortable condition or because of worry. Several nights of good sleep in such cases often result in remarkable improvement and may be life saving. Morphia is, in my opinion, the best drug to use in severe cases. If there is Cheyne-Stokes breathing, caffeine sodium benzoate, grains seven and one-half, given with the morphia will stimulate the respiratory center and offset the depressing effects of the morphine. Later mild sedatives such as bromides, the barbituric acid derivatives or chloral hydrate can replace the morphia.

The type of diet will vary in general according to the state of nutrition of the patient. If the patient is over-weight, a gradual reduction is advisable; if under-weight, a diet of high caloric value may be indicated. Recent work has tended to show that a very low caloric diet will lower the patient's metabolism and cause the heart to do less work; hence, such a diet may be of great value for a time in severe cases. More important than the type or quantity of foods is the quantity of fluids. This fact is often overlooked. A patient with dropsy should be limited to from 1,000 to 1,500 cc. (two to three pints) of fluid in twenty-four hours for a short period at least. Of course, if there is some contraindication to fluid limitation, the amount may be increased. The Karrel diet in which 200 cc. (a little less than one-half pint) of milk four times per day and absolutely nothing else is given will often start a marked diuresis. Of course such a limited diet can be given only a few days at a time.

Rest, sedatives and limitation of fluids will in many patients cause a diuresis accompanied by marked improvement. However, in some cases additional aid is needed, and we customarily turn to digitalis or its allied preparations. Even if rest and

limitation of fluids seem to be working well, digitalis will often bring about additional and more rapid improvement. This is particularly true if auricular fibrillation is present, for, unless treated with digitalis, the patient with auricular fibrillation is apt to have a rapid and very irregular ventricular rate with a pulse deficit. As we all know, cases of auricular fibrillation with rapid ventricular rate, when properly treated with digitalis, usually present a dramatic improvement showing a slowing of the ventricular rate and a marked diuresis, resulting in a clearing up of the congestive failure. This slowing of the ventricular rate is brought about by an impairment of conduction through the auricular-ventricular bundle and represents the best understood action of digitalis. This, however, is not the only action of digitalis: it also increases the efficiency of the regular heart. According to Harrison, "This is brought about mainly by a decrease in the size of the ventricular cavities, but decrease in rate, elimination of pulse deficit and changes in the output in either direction may constitute subsidiary means whereby the efficiency of the heart is increased."

The three cardinal indications for digitalis therapy are: (1) auricular fibrillation with a rapid ventricular rate or auricular flutter; (2) definite symptoms or signs of congestive heart failure; (3) therapeutic testing in cases in which we are unable to be sure of the presence of congestive failure, or warding off an impending failure in patients who are becoming increasingly short of breath. The only common contraindication to the administration of digitalis in patients with congestive failure is digitalis intoxication. However, digitalis is useless in conditions of peripheral failure or shock such as may be found after surgical operations or in pneumonia or diphtheria. If congestive failure is present in these conditions, digitalis should of course be given. Digitalis acts as a diuretic only in an indirect manner through improving the state of the circulation of the whole body and particularly the kidneys.

Digitalis may in emergency cases be administered in massive and repeated doses. However, such methods are not ordinarily needed. The average patient will require about thirty grains of the standardized digitalis leaf for digitalization, and, if necessary, it is possible to administer this amount in twenty-four hours. If there is no urgency, it is my practice to give one one and one-half grain tablet

three times per day for one week, and then start the patient on the maintenance dose which may vary from one and one-half to three grains per day. The so-called maintenance dose is the approximate amount excreted daily by the patient. It is the consensus of opinion that if digitalis is to be used, the patient should be digitalized and then kept on a maintenance dose. Toxic symptoms must be watched for and each patient will have to be observed and treated according to his individual requirements. Unless there is some contraindication, I believe it is best to use digitalis in a tablet or pill form which is properly standardized. This method of administration is usually much more accurate than using the tincture.

If after a reasonable trial with rest, limitation of fluids and digitalis therapy, the symptoms of congestive failure persist, then the use of the more specific diuretics is indicated.

Among the most valuable of the specific diuretics are the purine group; caffeine itself is too weak a diuretic to be of much benefit. Theobromine is a stronger diuretic and does not cause as much cerebral excitation; it may be given in doses of five to seven grains three times per day for several days. The salts of theobromine are widely used as diuretics also. Theobromine sodium-salicylate, commonly known as diuretin, is a very useful diuretic because it is quite often effective and is usually very well tolerated. It can be given in doses of seven and one-half to fifteen grains three times per day for several days, or can be given in doses of twenty to twenty-five grains three times per day for two to three days. The larger doses may cause nausea if continued too long. Even if no nausea occurs it is better to give the drug for several days at a time at about ten-day intervals. Small doses, such as grains seven and one-half three times per day or twice per day, may be continued over rather prolonged periods. Theobromine-calcium salicylate (theocalcin) is quite similar to the sodium salts and its dosage is essentially the same. In the opinion of some cardiologists it is less nauseating and better suited to prolonged administration.

Cases which do not respond to the milder diuretics such as those mentioned above should be given one of the more vigorous diuretics of the purine group. Theophylline (or theocin) is perhaps the best of these. This view is also expressed by White, Harrison, Marvin, Barker, Levine and others. Theo-

phylline is definitely a more powerful diuretic than theobromine or its sodium or calcium salts; however, it is also much more likely to cause nausea and vomiting. This drug may be given in doses of grains one and one-half to three, three times per day, for two to three days; however, if given longer, nausea is apt to occur. Hence, it is usually best to allow a rest interval of seven to ten days before repeating the treatment. In mild cases a daily dose of one and one-half grains may suffice to control edema. Theophylline-sodium-acetate (or theocin soluble) is, as its name suggests, soluble in water, and has been used for intravenous injection and also in suppositories. It is said to be less nauseating than theocin, and may be given in doses of two and one-half to five grains two to three times daily.

Other purine derivatives, which have some diuretic effect but seem to have a greater field as coronary dilators, are theophylline ethylene diamine, phyllidin, and theophylline-isopravanamine. Theophylline ethylene diamine, also known as metaphyllin, aminophyllin or euphyllin, is quite extensively used in diseases of the coronary arteries, particularly angina pectoris; in addition to its dilating effect on the coronaries, it is also a diuretic and may be given in doses of one and one-half to three grains three times per day. Theophylline calcium salicylate or phyllidin may be given in doses of four grains three to four times per day. Theophylline-isopravanamine may be given grains one and one-half three times per day. Glucophylline or theophylline-methyl glucamine has recently been advocated. It is claimed that the addition of methyl glucamine makes the theophylline more soluble, decreases the gastrointestinal irritation and enhances its diuretic action. My experience with this new drug has been rather limited to date.

In a certain number of cases of congestive failure none of the above-mentioned remedies will produce the desired diuretic effect and it is necessary to resort to the even more powerful plain mercurial or combined mercurial diuretics. Mercury has long been known to be a powerful diuretic and has been used a great deal in the past, particularly in the form of mercurous chloride or calomel. Calomel may be given in doses of grains one to two, two to three times a day for two to three days. However, calomel may cause untoward effects such as stomatitis, colitis, diarrhea or even nephritis. Saxl and Heilig were the first to develop and use mercurial salts which could

be injected intravenously or intramuscularly. They reported their work in 1920; however, these drugs were not introduced into America until about 1929. Beginning a few years after this time numerous reports began to appear concerning these drugs and their value as diuretics. It is interesting to note that they were first used in the treatment of syphilis; however, their powerful diuretic action was soon noted and they filled a much needed place among diuretic drugs. Merbaphen or novasurol was the first of the new mercury compounds. Mersalyl or salyrgan came into use almost at the same time and is also a mercury compound, being a 10 per cent solution of mercury-salicyl-allylamidocetate of sodium containing 36 per cent of mercury. Salyrgan, although it contains a higher percentage of mercury than novasurol, is definitely less toxic and has to a great extent replaced novasurol. Occasionally salyrgan and more frequently novasurol have caused severe toxic effects such as colitis, nephritis and acute or subacute atrophy of the liver. Cadbury has recently reported a case of acute mercury poisoning following the intravenous injection of salyrgan. However, many thousands of injections of salyrgan have been given and only comparatively few have resulted in toxic effects. The most important point to note is the condition of the patient's kidneys. If there is an acute or subacute nephritis, the mercurial diuretics should not be given. The presence of albumin and a moderate number of casts is not a contraindication to the administration of salyrgan; however, in a case showing definite hematuria, salyrgan should not be given. If a patient shows only a few red cells in the urine and if other diuretics fail, we may cautiously try one of the new mercury compounds. However, if signs or symptoms indicate a flare-up of the kidney condition, it is best to discontinue the drug.

Quite recently mercupurin has been introduced as a diuretic. Mercupurin is a combination of theophylline both free and chemically bound with a complex organic mercury compound. Mercupurin was introduced with the idea that the addition of the theophylline, which, as we remember, is one of the best of the purine diuretics, would cause a more marked diuretic action than the simple mercurial compound. A number of reports comparing the value of salyrgan and mercupurin have occurred in the literature and it is the consensus of opinion that their diuretic powers are about equal. Some workers

favor mercupurin; however, it must have a longer trial before final conclusions are drawn.

The three above-mentioned drugs are all administered in the same manner and the preparations are such that the dosage is the same. They are given intravenously or intramuscularly, but never subcutaneously. It is of the greatest importance to remember that these drugs are extremely irritating, and that if a small amount leaks out of a vein into the skin, a great deal of pain and ugly ulcerations with sloughings may result. If there is any doubt as to whether or not the needle is properly in the vein, it is better not to try the intravenous route but to withdraw the needle and give it deep into the gluteal muscle. It has been my experience that mercupurin is less irritating to the subcutaneous tissues than is salyrgan, and I was glad to see some reports in the literature agreeing with me. The usual initial dose is one-half of one cc. given, as stated above, intravenously or intramuscularly. If no untoward effects are noted, the dose may be increased to one cc. then to two cc. I have given four cc. of mercupurin on a number of occasions and have noticed no untoward effects. This dose is not given, however, if two cc. will produce the desired results. The injections may be repeated once per week and if necessary twice per week; however, when given so often the urine must be frequently checked. Within the last few months preparations of salyrgan and mercurin which can be used in suppository form have been put on the market. With the mercurial diuretic we may expect an average output in twenty-four hours of about three to three and one-half quarts.

There are certain salts that have a mild diuretic action, acting usually by causing a mild acidosis. Such salts are calcium chloride, ammonium chloride, ammonium nitrate and ammonium sulphate. These salts are particularly useful in combination with the mercurial diuretics. In some cases the combination of the two will cause a marked diuresis after the mercurials have failed. Large doses of these salts are usually necessary and ammonium nitrate or chloride may be given in doses of twenty-two and one-half grains four times per day, or the calcium chloride twenty grains per day. In addition to producing an acidosis, these drugs seem to have a synergistic effect when used with the mercurials.

Urea in a single dose of two to three ounces has been used over long periods of time with good re-

sults by some. Parathyroid extract has also been tried as a diuretic.

The exact mechanism of action of the primary diuretics is not known. There does not seem any agreement as to whether the chief action is directly upon the kidneys or indirectly throughout the tissue fluids.

Finally, we may have to resort to mechanical means such as thoracic or abdominal paracentesis for the withdrawal of fluids. In some cases sterile incisions in the dorsum of the feet, or the use of Southey's tubes, small canulae which may be inserted into the legs or feet and attached to small rubber tubes for drainage, may drain off a great deal of the edematous fluids.

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Professional Building.

THE VALUE OF GASTROSCOPY.*

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Gastroscopy is a non-operative method of exploring the interior of the stomach. It is now past the critical experimental stages of its development and is accepted by every clinic in the world. Going hand in hand with X-ray, it affords the most valuable means at our disposal to diagnose gastric disease.

The medical profession is inclined to view new diagnostic procedures with either enthusiasm or skepticism, but, in the main, it is slow to accept any method of diagnosis or treatment until there has been creditable evidence of its merit. So it is with gastroscopy, which is new only in the sense that it

has recently been perfected to a point where it is safe and practical. Yet, for many years, even antedating other valuable medical discoveries such as cystoscopy and radiology, pioneers have diligently worked on the problem of the non-surgical examination of the stomach.

The first man to vision the possibilities of gastroscopy was Kussmaul, who, in 1868, devised a metal tube which was to be passed into the stomach. His efforts were unsuccessful and his work in this direction was abandoned. From time to time interest was revived in gastroscopy and many contributions were made which eventually aided the perfection of the flexible gastroscope in 1932. To Dr. Rudolph

*Presented before the Peninsula Academy of Medicine, Hampton, Virginia, October 18, 1937.

Schindler we are indebted for this instrument of precision.

The gastroscope is composed of two essential parts, a distal flexible and a proximal rigid portion. The total length is 70½ cm. The distal end carries a soft rubber finger-tip, eight-volt electric lamp and an objective having a viewing angle of eighty degrees. In the flexible rubber portion are forty-six lenses covered with two thin layers of rubber. The proximal part is rigid and contains an ocular, light switch and air balloon. When one looks through the ocular, the view obtained is circular. Air is used to distend the collapsed stomach walls.

Since the introduction of the flexible gastroscope in 1932, our understanding of the gastric mucosa, either normal or pathological, has advanced with unbelievable rapidity. Today a direct view of the interior of the stomach is obtained. To have gained such world-wide recognition, the method of necessity, has had to be practical, safe and a valuable adjunct in diagnosis. I can attest to its practicability because we unhesitatingly gastroscopize any patient in whom there is an indication of gastric disease and the diagnosis is in doubt.

The technique of introduction of the gastroscope further shows its practicability. The patient reports to the office without breakfast and is given a preliminary injection of codein and atropine. Forty-five minutes later the hypopharynx is sprayed with a two per cent solution of pontocaine. Using a soft Ewald stomach tube, the stomach is then emptied by gravity. With the patient in the left lateral position, the gastroscope is introduced as one would pass a stomach tube. A wide area of the interior of the stomach is then carefully observed. The patient experiences no discomfort, and the time consumed in making the examination depends upon the skill of the examiner. Special training in technique is desirable and, furthermore, essential to the appreciation of orientation and the interpretation of the mucosa under observation.

The clinical value of gastroscopy to the medical profession is now well established. Let us together explore the interior of the stomach. We must first reach the lower depths of the stomach, at which point we observe with amazing clearness the patulous opening of the antrum. Peristaltic waves are seen, and the normal mucosa will appear to have a glistening orange-red color. With slight withdrawal of the instrument we observe a rope-like anatomical struc-

ture called the musculus sphincter antri which, presumably, separates the antrum from the body of the stomach. If gastritis is present, we can then distinguish the various types as follows:

In atrophic gastritis the mucosa will appear to be thinned out and have patches of a grayish-green color. Prominent branching blood vessels will be seen, and occasionally true polyps are present. It has been observed in this type of gastritis, especially if associated with pernicious anemia, that the regeneration of the mucosa will follow adequate liver therapy. Also, the relationship between this type of gastritis and beginning carcinoma is believed to be very close.

If hypertrophic gastritis is the type under observation, then the mucous membrane is velvety and appears spongy. The mucosal folds are thickened and small nodules are frequently encountered. Hemorrhages from this condition are not infrequent.

If we should come upon superficial gastritis, then the characteristic signs would be a puffy redness of the mucosa, and a moist swollen appearance. Frequently the presence of thick tenacious pathological exudate is the only evidence of this condition.

If, by chance, we happen to be looking into a post-operative stomach in which a gastroenterostomy has been done, we will be thrilled by the appearance of the stoma. Here any pathological condition may exist and its extent determined. Sutures, ulcers, bleeding, gastritis or new growths are easily seen if present.

Continuing to sweep the mucosa with our objective might bring a true gastric ulcer into view. Here we would see a punched out crater, varying in size, the base being yellow in color, or the seat of an organized clot; and the edges of this depression would be sharply demarcated from the healthy surrounding tissue. In this connection, gastroscopic observations on true gastric ulcers lead us to believe that they are not prone to become malignant. Furthermore, much can be learned through gastroscopy of their tendency to bleed, chronicity, and their response to various types of therapy. This information, therefore, should have far-reaching value in our consideration of future management of these types of cases.

The question of tumor is the final consideration in this brief resumé of gastroscopy. Benign tumors, so frequently missed with the X-ray, are commonly seen gastroscopically. It has been observed that

they frequently either precede, accompany, or follow the appearance of atrophic gastritis. The appearance is very much like any benign type of tumor, yet they are of extreme importance. They are frequently the site of bleeding and not uncommonly become malignant, and, if pedunculated and located in the antrum, are apt to prolapse through the pylorus.

In this connection, I am reminded of a case which I recently saw through the courtesy of Dr. Karl Corley. The patient, a woman, age twenty-eight, had a rather large gastric hemorrhage. Several days later a report on the X-rays of the stomach stated that the bleeding was the result of a gastric polyp located in the antrum and prolapsing through the pylorus. Gastroscopy failed to reveal any pathology in the stomach and later examinations indicated that this patient was bleeding from a duodenal ulcer. This decisive information, as revealed by gastroscopy, was of great importance in determining the management of this patient's case. This case, together with others of equal interest, is to be published in greater detail at a future date.

Finally, a disease of the stomach causing great mortality of the human race has been faced by the gastroscopist. We are all familiar with cancer of the stomach, its tendency to short history and rapid growth. As in neoplastic diseases of other organs, it is well recognized that early diagnosis determines to a large extent the hope for recovery. Direct vision with the gastroscopist now affords a practical means of attacking this problem. It also means that X-ray and gastroscopy, as well as other laboratory methods at our disposal, must be correlated and used frequently whenever indicated. This further indicates that X-ray and gastroscopy are not competitive but supplementary.

In conclusion, it may be stated that many of our concepts of gastric disease must be revised and that the conventional diagnostic methods now employed must be supplemented by gastroscopy. This is based upon the following gastroscopic facts:

1. Gastritis, formerly a disease of questionable existence, has become a definite disease entity.
2. The site and cause of obscure bleeding from the stomach can be observed directly.
3. True gastric ulcer is not believed to become malignant.
4. The cause of persistent symptoms in post-operative stomach can more often be explained.
5. The earlier diagnosis of cancer of the stomach is possible.

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ATROPHIC CIRRHOSIS OF THE LIVER, WITH A CASE REPORT.*

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Stedman defines cirrhosis as a degeneration or atrophy of the parenchyma cells of an organ, with hypertrophy of the interstitial connective tissue.

First, may we consider briefly the physiology of the normal liver? This is the largest single organ of the human body, weighing about three to three

and one-half pounds in the normal adult, or about one-fiftieth of the body weight. It occupies the superior and mainly right portion of the abdominal cavity, and lies immediately below the diaphragm.

In addition to its function of secreting bile, the liver plays an important part in the metabolism of both carbohydrate and nitrogenous materials ab-

*Read before the Northern Neck Medical Society.

sorbed from the intestines and which are conveyed to it by the portal vein. It is also thought to have something to do with the desaturation of fatty acids. It also has a number of other indispensable functions, serving as a "graveyard" for the red corpuscles, and is one of the most important sites for the storage of iron pigment obtained from them in destruction. It is also a site of manufacture of fibrogen, and it may be the sole place of creation of this material. There is clinical and laboratory evidence to support the theory that this organ has something to do with the formation of antithrombin.

For practical purposes, it is convenient to divide cirrhosis of the liver into two main classes, portal and biliary. The term "cirrhosis," which was first applied by Laennec, refers to that tawny color of the liver in the commoner type, portal, but it has since, by common usage, become synonymous with fibrosis. The term portal cirrhosis, or Laennec's cirrhosis, atrophic cirrhosis, alcoholic cirrhosis, hob-nail liver, or gin-drinker's liver are all synonymous terms.

Portal cirrhosis is, as a rule, a disease of middle age. It may, however, occasionally develop in young children. The condition usually appears in individuals about forty years of age and terminates fatally in the early fifties. Men are affected more often than women, two to one; occupation and station in life seem to have no influence other than of possibly exposing the individual to alcoholism.

In spite of attempts, especially in recent years, to explain portal cirrhosis on the basis of infection, or "subinfection" and intoxications other than with alcohol, very strong clinical opinion still points to alcohol as the chief etiological factor. The poison may act directly on the liver cells after absorption into the portal system from the gastro-intestinal tract, or indirectly by injuring the gastro-intestinal mucosa and producing a catarrhal condition which leads to chronic portal infection or intoxication. Whatever the mode of action, it is certain that the disease is very common in men who drink distilled liquors steadily and in excess.

The ingestion of highly seasoned foods is also believed to be a contributory factor in some cases, particularly among Mohammedans and Chinese who do not use alcohol.

While the liver is usually smaller than normal, because of the contraction of the fibrous tissue and atrophy of the liver cells, it is often enlarged, espe-

cially when there is much fatty change. There may be also, as the disease progresses, a very considerable restoration of the liver substance by compensatory hyperplasia. Acute infectious diseases, syphilis, tuberculosis, and malaria have also been regarded as additional inciting factors. In all probability there is necessarily a combination of toxic agents to produce the lesion. In the ordinary type the surface is granular, with elevations or "hob nails" which vary from the size of a pin head to that of a pea. The cut surface, which is usually yellowish in color, displaces a network of fine and coarse pearly bodies of connective tissue.

Some of the most important symptoms are obstruction of the portal circulation, which causes congestion and catarrh of the stomach; hence the initial symptoms are anorexia, fetor of breath, fullness and distress after eating, eructation, nausea and vomiting of mucus in advanced cases, flatulence and constipation. For months and years these phenomena may be the only evidence of the disease.

As the pressure in the portal system increases, the collateral vessels engorge, and as a result the superficial abdominal veins become prominent and hemorrhoids develop. Engorgement of the portal also leads to ascites and swelling of the feet, to enlargement of the spleen, and not infrequently to conspicuous hemorrhage from the stomach or bowels. There is a gradual loss of flesh and strength, the skin is muddy in appearance, though conspicuous jaundice is not common and occurs only as a complication. Nervous symptoms, delirium, stupor, convulsions and coma occasionally appear toward the end of the disease. They are probably due to the retention of poisons that the liver is unable to convert or eliminate.

The majority of cases terminate fatally in from three to five years, or from one to two years after the compensatory circulation fails. Death results from exhaustion, hemorrhage, pulmonary edema, or toxemia. About 25 per cent of cases vomit blood; of these about one-fifth die of hemorrhage, generally from the esophageal veins or gastric oozing from the mucosa.

The kidneys, heart and blood vessels are often coincidentally involved in the cirrhotic process. Tuberculosis of the peritoneum is a common complication. Ascites develops in about 50 per cent of cases, and in the great majority of those who die of the disease is a prominent feature. It is said to be due

not only to portal obstruction, but in certain cases to chronic peritonitis, to toxemia, or to cardiac failure. The abdomen may be enormously enlarged and distended and contain as much as fifteen to twenty liters of fluid. Although toxic symptoms usually develop during the later stage of the disease, they may appear at any time.

In the early stage the diagnosis can only be suspected. In the drunkard, chronic gastric catarrh with enlargement of the liver would strongly indicate the disease. Thrombosis of the portal vein produces a similar clinical picture, but the symptoms usually develop much more rapidly.

During the early stage of portal cirrhosis the symptoms are so vague that definite diagnosis is often very difficult. In alcoholic patients or an individual who has led an irregular life, persistent dyspepsia with repeated attacks of "biliousness" and perhaps slight jaundice should arouse suspicion of an early hepatic cirrhosis. Added confirmation is given if the liver be enlarged and tender and the spleen enlarged. Later the "hepatic face" is characteristic; the patient is thin, the eyes sunken, the nose sharp, distinct venules appear on the nose and cheeks, and the skin is muddy or subicteroid. Definite signs of portal obstruction render the diagnosis certain.

Any degree of accuracy in prognosis is almost impossible on account of the wide variations in the causes of the disease. At times when there are no major symptoms, the disease may remain unrecognized throughout life and the victim die from some other cause. Again, the disease may be acute and end fatally in a few months. The great bulk of cases fall between those extremes, and the average duration from the onset of definite evidence of cirrhosis until death is about ten years. Death is usually due to toxemia, inanition, or intercurrent infection.

The treatment of the disease is almost as indefinite as the prognosis; however, in the pre-ascitic stage and before hematemesis has occurred, the therapeutic measures should rectify the patient's mode of life and personal hygiene. Alcohol should be prohibited, large quantities of water taken, and the bowels regulated with salines. The diet should be simple, and free from highly-seasoned foods. Milk, if well-tolerated, should be used freely, but eggs, meats and fats should be restricted. Suitable exercise and hydrotherapy are necessary.

CASE REPORT

Patient, a white male, age sixty-four, married. American, canning factory manager.

This patient was admitted to St. Luke's Hospital, Richmond, Va., in 1930, under the services of Dr. J. H. Smith and Dr. W. W. Gill, the latter on account of some ear trouble which turned out to be a benign osteoma of the right auditory canal, which was removed and from which the patient had no further trouble. However, at this time there was question about cardiac irregularity associated with epigastric fullness and distress, especially just after a hearty meal. Blood pressure was rather high, but circulation as a whole was thought to be in very good condition.

On January 24, 1936, the patient was in a boat to get some oysters and fell between boat and wharf, injuring chin, nose, right arm, tongue and lips. Nose bled considerably for several weeks, for which he was referred to Dr. Wallace Gill, who found there was some abrasion of the right middle turbinate; also the septal membrane was torn on both sides. This, however, soon cleared up, and the patient seemed to get along very nicely from his accident.

About the middle of February he noticed considerable swelling of his feet and ankles, being more noticeable at night, and seemed worse when he was up and around very much. Later he began to have some shortness of breath, the least exertion making him quite breathless. Around the first of March he noticed his abdomen increasing in size; however, there was no particular nocturnal dyspnea or orthopnea. Since that time dyspnea, swelling of feet and ankles, and enlargement of abdomen got worse and became more constant. During the middle of March his whole abdomen seemed sore and there was a dull aching pain in lateral abdomen at times, while at other times it was in the epigastrium. He complained of small amounts of food filling him up.

However, as previously stated, his sensation of heart skipping gave him but little concern. The usual weight of this patient was 165; present weight 180. No urinary symptoms, bowels act moderately well, slight cough for some months with mucoid sputum. No hemoptysis. He took mild laxatives occasionally, but has never taken any digitalis for the heart action.

General appearance is that of a well-developed and nourished elderly white man lying flat in bed,

apparently in no particular pain or distress. Pupils equal and regular; reacted to light and accommodation. Eyegrounds showed considerable evidence of arteriosclerosis, disc was clear; nose and ears roughly normal other than the patient seemed rather deaf; mouth and throat essentially negative.

Neck vessels showed some engorgement and there was moderate pulsation on right side; thyroid gland normal. Apex of heart rather indistinctly made out in fifth interspace about three cm. lateral to the mid-clavicular line; rhythm regular; rate eighty-six. There was a short rough systolic murmur around the apex, and a similar murmur in the pulmonic area. Blood pressure 140/80. Aortic second sound rather distant and about equal to pulmonic second sound. There was some dullness at the base of both lungs, particularly on the right.

The abdomen was markedly distended and tense, with a definite fluid wave. There was an indefinite rounded, hard, firm, possibly slightly tender mass in the epigastrium, where there was some dullness, which extended to the right, suggesting that the whole abnormality here was an enlarged liver. Spleen and kidneys not felt. No other abnormality found in the abdominal cavity.

The extremities showed no tremor or clubbing; epitrochlear glands not palpable. There was well-marked pitting edema over both tibiae, being more pronounced over the right, and extending to some distance above the knees. Knee and ankle reflexes not obtainable on account of the edema.

The condition of this patient continued to become progressively worse until the last of March, when he was sent to St. Luke's Hospital under the care of Dr. J. H. Smith, with practically the same physical findings as previously stated. Laboratory findings at this time were as follows:

Hemoglobin 60 per cent; color index .9; R. B. C. 3,250,000; leukocytes 3,600; polys, 75 per cent; lymphs, 23 per cent; eosinophils, 2 per cent. Urinalysis: Color, dark amber, slightly cloudy; acid reaction, sp. gr. 1.029; slight trace of albumin, sugar and acetone negative, bile negative. Microscopally: No blood, one to two pus cells per high-power field, mucus abundant, occasional hyalin and granular casts. Renal function (phthalein test): Excretion first hour, 55 per cent; excretion, second hour, 10 per cent; total in two hours, 65 per cent. Blood

chemistry showed 100 mg. of sugar per 100 cc. of blood. Blood Wassermann negative.

This patient returned home from St. Luke's Hospital April 11, 1936, with some improvement of the edema of the extremities; however, his abdominal distention had improved but little if any. He was continued on fifteen grains of ammonium chloride three times a day, and one and one-half grains of digitalis daily, with intravenous salyrgan three times a week in one cc. doses. This was later substituted by novasurol, but with no avail.

His ascites grew from bad to worse until it was deemed advisable to remove the ascitic fluid by paracentesis. Ten quarts was removed about the first of May, and this gave considerable relief for a few days, only to be repeated about every ten days to take care of the respiratory embarrassment and abdominal discomfort. This was repeated five times from May 1 until June 15, removing a total of twenty-eight quarts of fluid.

During the last six weeks before death the patient would become very toxic and comatosed, lasting from twenty-four to forty-eight hours, after which he would be reasonably rational and bright. At times codeine was resorted to to take care of pain; however, at no time did he suffer great pain.

A few weeks prior to death the superficial abdominal veins and especially those on the right side became very prominent and rather engorged; also rather bad hemorrhoids developed, and these frequently bled. Patient died July 24 from general toxemia and exhaustion.

May we state here that this patient had been a rather heavy and constant user of strong alcoholic beverages practically all of his life.

Autopsy was confined to the abdominal cavity, which revealed a rather small, hard, fibrous and nodular liver about one-half the normal size, with considerable hardening and fibrous tissue formation about the hepatic vessels and gall-bladder. The pancreas was smaller than normal in size with no particular gross pathology. The spleen was about three times the normal size, and was distinctly hard and fibrous. The stomach and small intestines showed no gross pathological lesions.

Microscopic sections of the spleen and liver were diagnosed by Dr. S. W. Budd as: Interlobular cirrhosis, and splenomegaly or Banti's disease.

A CASE OF ACUTE STAPHYLOCOCCIC OSTEOMYELITIS AND STAPHYLOCOCEMIA TREATED WITH STAPHYLOCOCCUS ANTITOXIN AND PROMPT SURGICAL DRAINAGE.

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As early as 1894 the toxicity of staphylococcal filtrates was described¹ as causing degenerative changes in the leucocytes of the rabbit. Soon thereafter other observers² demonstrated that rabbits developed specific anti-leucocidal properties in their blood serum after a series of increasing subcutaneous injections of staphylococcus filtrates.

In 1927, Parker and Banzhof³, were successful in producing a serum by injecting horses with staphylococcus filtrates which in high dilutions neutralized the skin-necrotizing properties of staphylococcus filtrates.

Very little recognition was given these early observations until 1928 when a disaster occurred in Bundaberg, Australia, which resulted in the death within fifteen to thirty-four hours of twelve children out of twenty-one injected with diphtheria toxin-antitoxin mixture. The diphtheria toxin-antitoxin mixture was subsequently proven to have been contaminated with staphylococci. The report of the Royal Commission of Investigation⁴ concluded that the fatalities were due to the injection of living toxigenic staphylococci.

Subsequent to the Bundaberg disaster and the resulting revival of interest initiated by Burnet⁵ in the toxigenic properties of staphylococci, various workers including Burnet⁶ have reported the preparation of staphylococcus antitoxin serum from horses immunized with staphylococcus exotoxin. Encouraging clinical results have been observed with staphylococcus antitoxin in the treatment of staphylococcus infections by Pantou, Balentine and Dix⁷, Gross,⁸⁻⁹⁻¹⁰ Parish and Clark,¹¹ Dolman,¹²⁻¹³ Keith,¹⁴ and Joyner and Smith.¹⁵ The largest and best controlled series of cases was reported by Dolman. Joyner and Smith observed that the total leucocyte count and the ratio of segmented to non-segmented polymorphonuclear leucocytes was a reliable index of the severity of toxemia and a convenient guide to

the dose and frequency of administration of the antitoxin.

It is of interest to point out that in Dolman's series of cases with osteomyelitis and staphylococemia he found there was no relationship between the site of the infection and severity of the toxemia except when the site was in the neighborhood of the hip joint. He states that osteomyelitis in this region is not often diagnosed early and that, when diagnosed, satisfactory drainage provides a difficult surgical problem. He feels that infections which localize in this region lead toward a fulminating type with profound toxemia.¹³

We believe the following case presents an excellent result in the treatment of acute osteomyelitis in the region of the hip combining early surgical drainage with the use of staphylococcus antitoxin. The differential leukocytic formula and the total leucocyte count combined with the clinical signs of toxemia were used as criteria for the administration of the antitoxin.

CASE REPORT

Case No. 82346.—O. P. T., a white female, fifteen years of age, was submitted to Duke University Hospital March 3, 1937, with the complaint of four days' duration, of severe throbbing pain in the region of the right groin and perineum. She gave a history of having had, two weeks previously, a vesicle on her right heel which drained some yellowish material for a few days and then healed completely. There is also a history of trauma, when, twelve days prior to admission, she had attempted to do the "splits" and felt something pop in the region of her right hip with associated pain in the right groin. She apparently recovered from all this and was getting along nicely until, four days prior to admission, she developed severe pain in the right groin with a feeling of malaise and some fever. This continued until the pain became excruciating

and was accentuated by any movement of the right leg or rotation of the body. Her family physician who had been keeping her in bed with moist heat to the region observed her toxicity and referred her into the hospital.

On admission to the hospital the patient was acutely ill and in obvious distress: T. 39.4, P. 96, R. 24. Positive findings on physical examination were limited to the right hip region. There was definite fulness, swelling, local heat and tenderness about the right hip region with pronounced, almost finger point tenderness over the posterior aspect of the greater trochanter. There was a suggestive fulness of the joint capsule to palpation. All motion of the right hip was markedly guarded, and the thigh was held in a flexed and abducted position. The patient's pallor, anxiety, and general picture was that of sepsis. Accessory findings at this time showed a hemoglobin of 84 per cent and a leucocytosis of 22,200 (62 per cent segmented, 20 per cent J-forms, 8 per cent stab-forms, and 10 per cent lymphocytes), negative blood Wassermann and urinary findings. Blood culture revealed eighteen colonies of hemolytic staphylococcus aureus per cc. of blood. A diagnostic aspiration of the hip joint confirmed a joint effusion but the synovial fluid was grossly negative and sterile on culture. X-rays of the right hip and pelvis were reported normal.

The clinical impression was that of an acute osteomyelitis of the upper end of the femur without extension into the hip joint, so that the next day a posterior approach to the hip joint (Ober's) was made. A somewhat distended and injected capsule was demonstrated from which pus was aspirated; the decision was made not to trephine the bone and drainage was established by capsulotomy and a penrose drain. Hip spica was then applied. Culture of the joint was now positive for hemolytic staphylococcus aureus.

The patient continued to appear very toxic and spiked a daily fever above 39° and on the third post-operative day revealed sixty colonies per cc. of blood on culture. She had previously received two transfusions of 250 cc. of citrated blood. Her total leukocyte count which has risen to 22,000 was now 14,000 with marked increase in non-segmented polymorphonuclear leucocytes and a fall in segmented polymorphonuclear, with a ratio of 1:1. Staphylococcus antitoxin was felt to be indicated and

the patient was given 20,000 international units intramuscularly. On the following day the patient complained of chest pain, had a respiratory rate of forty per minute and a cough, productive of large amounts of thick muco-purulent sputum, cultures of which were positive for hemolytic staphylococcus aureus. Portable X-rays confirmed a broncho-pneumonia in the lower lobe of the left lung. The patient was given 60,000 units of antitoxin and several hours after this treatment her temperature had fallen and her leucocyte count rose to 15,800 with a slight increase in segmented polymorphonuclear leucocytes over the non-segmented forms.

During the next two days she received 20,000 units of antitoxin intramuscularly. Her respiratory complaints disappeared and X-ray examination showed a clear chest on her ninth hospital day. Her leucocyte count on this day was 28,700 with a marked increase in segmented polymorphonuclear leucocytes and a decrease in non-segmented forms. On the tenth hospital day the right inguinal region showed definite fulness and was aspirated after removing the plaster spica and traction applied; definite pus was demonstrated and incision and drainage under gas showed the abscess to lie just anterior to the hip joint. By the thirteenth day the patient's leucocyte count had fallen to 15,000 with a decrease in segmented polymorphonuclear in relation to non-segmented polymorphonuclear forms. It was again thought advisable to administer more antitoxin and she received 20,000 units intramuscularly. The following day she complained of severe pain in the right elbow; the joint was slightly swollen, red, hot, and quite painful on motion. The joint was aspirated and about 6 cc. of purulent fluid withdrawn from which was grown a pure culture of hemolytic staphylococcus aureus; with rest and local heat the pain and inflammation subsided. Subsequent X-ray examination showed no bony involvement and full range of motion of the elbow joint. On the seventeenth hospital day the patient was started on a course of staphylococcus toxoid treatments, after a skin test of 0.1 cc. of 1:10 dilution gave no reaction. A total of fourteen subcutaneous injections of toxoid in increasing amounts and strength was given every other day, finally ending, with patient's dismissal, with 0.6 cc. of 1:1 (concentrated) dilution (see chart). The patient gradually improved during the rest of her hospital stay.

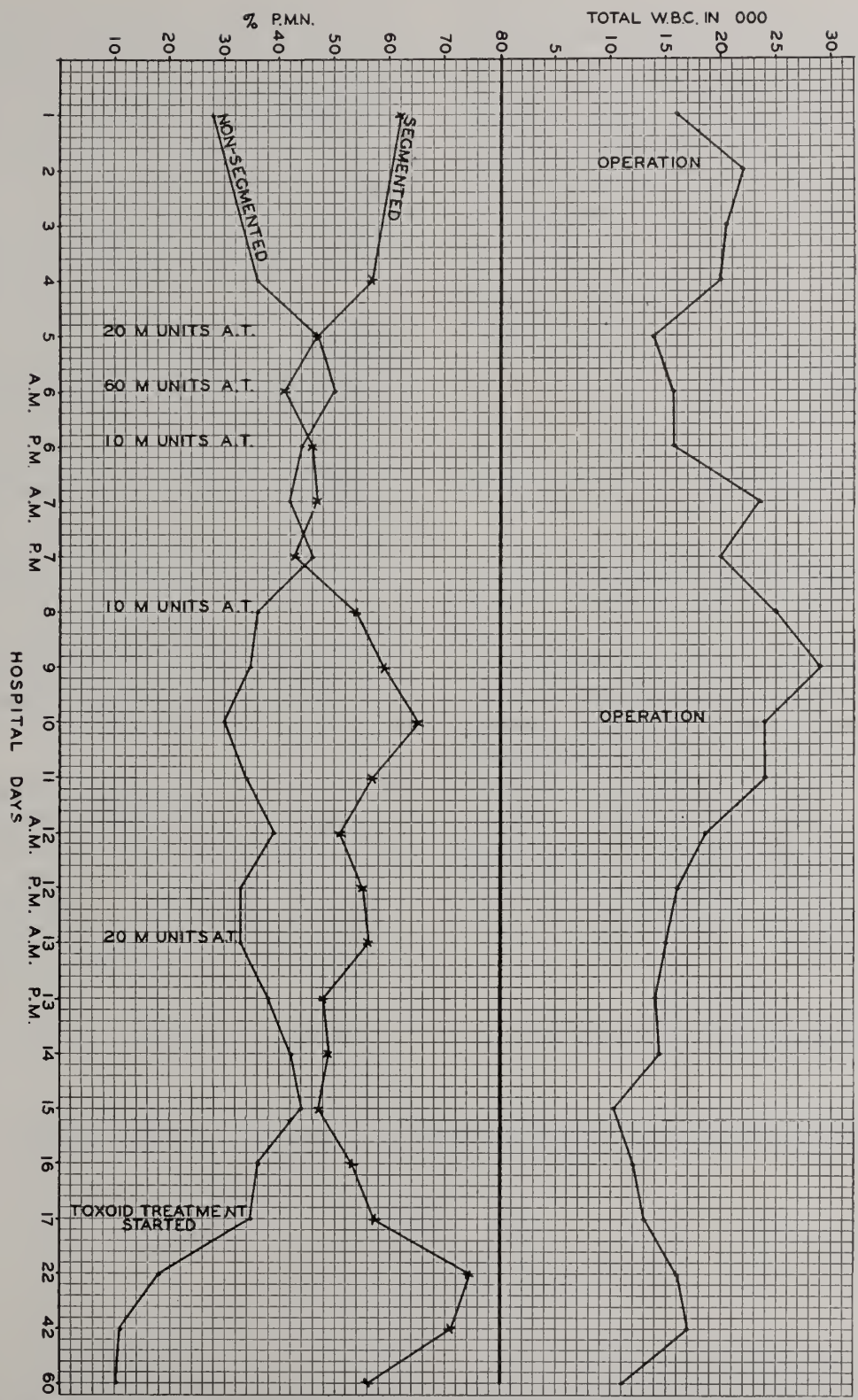


Chart showing relationship of total leucocyte count and segment to non-segment forms as indication for administration of hemolytic staphylococcus aureus antitoxin.

X-rays of the right hip and pelvis later revealed extensive osteomyelitic destruction of the entire innominate bone, extending into the head and neck of the right femur. From the nineteenth to the sixty-sixth hospital day blood cultures were repeatedly sterile with one exception when less than one colony per cc. was grown. During her hospital stay she received a total of twenty blood transfusions of 250 cc. each (one about every third day). Her general condition gradually improved so that during the last twelve days of her stay her temperature was normal except for one brief elevation of 38.2°, and the discharge from the two wounds had almost entirely ceased.

The patient was placed in a hip spica and discharged on the sixty-sixth hospital day with instructions to continue nursing care at home and return to the hospital in two months for check-up.

CONCLUSION

A case of acute hemolytic staphylococcic aureus pyemia with secondary acute osteomyelitis of the pelvis, suppurative arthritis of an elbow, and bronchial pneumonia is presented to demonstrate the value of a specific antitoxin used in conjunction with the usual treatment of surgical drainage, splinting, and transfusions. The administration and dosage of the antitoxin is based on the degree of toxemia as determined by clinical signs and leucocyte reaction (total leucocyte count and ratio of segmented to non-segmented polymorphonuclear leucocytes). A further tissue response was stimulated in the chronic stage by administration of a specific toxoid.

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AIR EMBOLISM OR PLEURAL SHOCK—REPORT OF TWO CASES.

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Chief of Medicine,
and

F. H. YORKOFF, M. D.,
Resident in Medicine, C. and O. Hospital,
Clifton Forge, Virginia

It has oft been said by chest men that if thoracentesis and artificial pneumothorax are employed long enough, one is apt to encounter untoward symptoms and sudden death. Pleural shock, so called, was

originally described in 1864 by Roger. He described it as an "eclamptic fit" characterized by cardio-respiratory embarrassment, tonic and clonic contraction of the muscles, loss of consciousness and in some in-

stances sudden death. Roger ascribed this symptom complex to reflex nervous disturbances. Brauer in 1912 put forth the view that it was in reality due to air embolism. In 1911 Dayton reported fifteen fatal cases following thoracentesis. Since the introduction of artificial pneumothorax as a therapeutic measure, these accidents have been noted with great frequency. Whether the cause be pleural shock, air embolism, or other factors as pulmonary edema or thrombosis, the essential thing to remember is that they do happen.

Within the past five weeks we have had two cases, in which one terminated fatally. The most recent case is believed to be one of air embolism. This patient is now living and is apparently suffering no residual effects.

Case No. 1. Mrs. L. M., a white woman, forty-nine years of age, who came to the Out-Patient Department for stereoscopic examination of her chest on Thursday, October 21, 1937, had formerly received artificial pneumothorax for pulmonary tuberculosis of her left upper chest.

Family History: Mother had died of pneumonia about ten years ago. Father had died of old age. There were no brothers or sisters, no history of vascular disease, no diabetes or tuberculosis in her family.

Past History: Unessential.

Marital: Patient has been happily married for twenty-five years. Her husband has an arrested case of pulmonary tuberculosis of the left side, the duration of which is unknown. Her eldest boy who is twenty-five years old has had tuberculosis since 1932. He had previously been in a sanatorium and is not clinically free from symptoms. He has now been without gas for almost a year. Her other child, a young man of twenty years, has been to this Hospital frequently for "gas" because of active tuberculosis. Probably three years ago the patient presented clinical symptoms of pulmonary tuberculosis, but it is only during the last year that she has been receiving treatment, such as institutionalization for a period of several months and artificial pneumothorax of her left upper chest.

Present Story: Upon stereoscopic examination it was decided that the patient needed artificial pneumothorax of her left upper chest because of some activity. The patient was placed on her right side and air was introduced into the fourth interspace posteriorly on the left. About 100 c.c. was intro-

duced when it was noticed that the patient had become cyanotic and was having a difficult time breathing. The needle was immediately withdrawn and at that time the patient lapsed into unconsciousness. She was immediately placed in the Trendelenburg position and given artificial respiration. Oxygen was started as quickly as possible, and one c.c. adrenalin was given intravenously. Her color became better. Her pulse picked up and her respirations had more depth to them. Upon reacting within fifteen minutes she was placed in a room and oxygen kept up.

Physical Examination: At the time, it was noticed that the patient was a small thin elderly woman, quite irrational. Her talk was irrelevant.

Eyes: The pupils were small but reacted to light and accommodation. The fundi were not visualized.

Ears: Negative.

Mouth: There was a moderate amount of pyorrhea and caries. The tonsils were small, atrophic and buried. The tongue was coated and in the midline.

Neck: Thin and scrawny.

Chest Inspection: The respirations were quite shallow, about twenty per minute. Her chest was thin and of the ptotic type.

Palpation: Negative.

Percussion: There was a small area of dullness high up in the apical region, posteriorly, on the left. Below that was a small area of tympany.

Auscultation: Many fine mucous bubbly rales could be heard in the left apical region. The right chest was clear.

Heart: Blood pressure 80/60. Heart sounds were very faint. The pulse was small and feeble, but regular.

Abdomen: The skin was markedly striated from previous pregnancies. There were no masses.

Pelvic: Not done.

Extremities: No edema.

Reflexes: There was a suggestive Babinski of the right side. The patella reflexes were hyperactive and equal. There was no positive Kernig or Brudzinski.

Subsequent Course: The patient was very restless during the first day and was given several hypodermics of morphine sulphate, grains one-sixth. She was quite cyanosed most of the day. Her pulse was

100, respiration 18, temperature 98.6. During the evening she complained of being nauseated and she vomited several times, greenish fluid. At bedtime she was given 500 c.c. of 10 per cent glucose saline. She spent a very restless night. The next day she had several convulsions which were eclamptic in nature. The fingers of her hands became rigid; her eyes drew back and her pupils were markedly dilated; her body shook and there were generalized spasms, and her diaphragm became fixed. This convulsion lasted about a minute. She was then given 20 c.c. of 15 per cent magnesium sulphate intravenously, and morphine sulphate grains one-sixth. This had no immediate effect. She called for her husband and screamed that she was unable to see. She was unable to follow any of us with her eyes. Examination of her eyes revealed myotic pupils, no attempt at visualization and a certain fixity of her eyes. Her pupils were dilated with homatropine. Examination of the fundi revealed no air emboli. She ceased to have convulsions after four P. M. that afternoon. The next day towards evening she became more quiet and was able to distinguish objects faintly. On the following day she was rational and was able to see very well. She did very well after that and further examination revealed no residual effects. Her blood pressure on discharge was 110/80. Her blood urea was 17.6, creatinine 1.4, Hb. 80, blood sugar 168, probably because of having gotten a glucose infusion previously. Spinal fluid examination was negative. Urine showed a faint trace of albumen and no acetone. It is thought that her blindness was due to emboli along the visual pathways probably in the occipital lobe of the cerebrum.

Case No. 2. The second case occurred in a thirty-nine-year-old white woman in the last stages of tuberculous cachexia with a massive pleural effusion in her right chest. She had been tapped three times at the angle of the scapula without touching fluid. X-ray had verified the clinical findings of massive pleural effusion with many adhesions at the base and a markedly irregular diaphragm. Upon being tapped the fourth time to relieve marked respiratory embarrassment, she became more cyanotic. The needle was immediately withdrawn and restorative measures applied. The patient coughed up frothy blood, had a series of clonic convulsions and ceased to breathe. No post-mortem was obtained.

CONCLUSIONS

1. Because of the likelihood of disaster, it is thought that relatives of the patient should be told of the untoward symptoms.
2. Despite the great care taken in doing a pneumothorax, accidents will occur.
3. It is believed that air embolism to the occipital lobe has occurred after pneumothorax.

Correspondence

Hidden Urethral Strictures.

FRANKTOWN, VA.,
JANUARY 27, 1938.

TO THE EDITOR:

There are thousands of old gonorrhea cases who have very serious strictures destroying their kidneys and ruining their health generally, besides keeping them up nights urinating. But since it comes on gradually, like the hour hand of a clock, they are unaware of their condition and have no idea at all of a stricture, claiming that they pass their water very freely indeed, when the opening is as small as a small sewing needle and the stream is perpendicular and almost drop by drop, and after finishing you can draw off a full quart of residual urine, even in young people. Well, I just think if we would keep our eyes open to these cases, we would relieve very many who claim to be very comfortable below the sphynsis.

E. W. P. DOWNING, M. D.

Invitation to Washington Meeting.

1718 M STREET, N. W.,
WASHINGTON, D. C.,
MARCH 8, 1938.

TO THE SECRETARY:

The Medical Society of the District of Columbia will hold its Annual Scientific Assembly, May 4-5, 1938. An interesting well-balanced program is assured and includes several guest speakers.

We are writing you at this early date to ask you to make an announcement of the meeting before your Society at your meetings occurring prior to these dates and assist us in interesting as many of your membership as possible in spending these days in Washington attending the meetings.

An especially attractive feature of the meeting is the complimentary luncheon on Wednesday, May 4, for those registering. It has proved to be a popular

get-together for renewing old acquaintances and making new ones.

A banquet is also held on Thursday evening, May 5, and many also enjoy this function.

We sincerely hope members of your Society will be able to attend and spend these days in Washington.

We wish to thank you in advance for your help in bringing the dates of our meeting before the membership of your Society.

THE ATTENDANCE COMMITTEE,
J. LLOYD COLLINS, M. D.,
Chairman.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. JAMES B. STONE, 15 Maxwell Road, Richmond.

President-Elect—MRS. HAWES CAMPBELL, Venter.

Corresponding Secretary—MRS. LAWRENCE O. SNEAD, 5307 New Kent Road, Richmond.

Recording Secretary—MRS. JAMES K. HALL, 3011 Seminary Avenue, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, 2502 Hawthorne Avenue, Richmond.

Chairman of Publicity—MRS. FRED J. WAMPLER, 4103 Forest Hill Avenue, Richmond.

Mid-Winter Board Meeting.

The Mid-Winter meeting of the Executive Board was held in Richmond on Wednesday, March 9 at 11 A. M., in the Miller Library Room of the Richmond Academy of Medicine Building. Sixteen members of the Board from various sections of the State were present. An interesting resumé of the activities of the Officers, Standing Committee Chairmen and County Presidents for the first half of their year's work was reported. Of particular interest is the fact that the New Constitution, By-Laws, and Handbook for County Auxiliaries has been completed by the Revision Committee, and was approved by the Board at this meeting. As soon as printing arrangements can be made, this most helpful guide will be printed in pamphlet form and ready for distribution.

Following the morning business session, the members were the guests of the President, Mrs. James B. Stone, for lunch at her home. Dr. Fletcher J.

Wright, of Petersburg, Chairman of the Advisory Council, who was to have been the guest speaker at luncheon, was unable to attend. However, his message to the Board was read by Mrs. Stone. The Richmond Member of the Advisory Council, Dr. James B. Stone, who was in attendance, was pressed into service for a few remarks, and gave a very delightful impromptu talk.

Doctors' Day.

A number of years ago the Southern Auxiliary suggested that a suitable day be set aside and observed by each Auxiliary, this day to be known as Doctors' Day. In Virginia this Day has annually been observed at some convenient time during the early Spring, and has been a part of the program of each County Auxiliary. Our President is urging each County Unit to have a Doctors' Day program in either April or May. This Day may be observed in any way that the local Auxiliaries desire. As a suggestion, it may be observed either by a memorial program to a local doctor who has passed on to a higher service, or by honoring some living member or members of the medical profession.

Letter to the Auxiliaries.

When this issue of the VIRGINIA MEDICAL MONTHLY reaches you the Virginia Auxiliary will have passed the half-way mark in its year's work. Under a new administration it takes some little while for the machinery of any organization to be set into motion. However, I feel that by now the State Auxiliary is running along smoothly, but we must not be satisfied with just that. We want to forge ahead and pick up speed on the last lap of our year's journey. Six months are left to us, and during that time comes the summer months, when some of our organized groups are not so active. Let's try not to have any "moratoriums" in Auxiliary work, but if some of you find it necessary to have some inactive months, let me urge you to double your efforts, and concentrate hard on Auxiliary work during the Spring and early Fall.

Again may I remind you of our project for the year, the Tuberculosis Sanatorium Bed. Last year because our bed was available to a doctor's daughter, her health was restored, and perhaps her life was actually saved! We are all intensely interested in tuberculosis work among the general public in the sections of the State in which we live, but let us not forget that our bed makes it possible

for "one of our own", a doctor or his dependant, to have life itself in severe cases, and enables those afflicted with a milder type of the disease to enjoy a more healthful life. If you have not already done so, let me appeal to you to send in the contribution from your Auxiliary to Mrs. F. J. Wright, 49 S. Market St., Petersburg, Va., Chairman of this Fund.

It has been my pleasure to visit a number of our organized groups during the past few months. I should like so much to meet with each Auxiliary in the State before the expiration of my term of office, and hope that I may be accorded that privilege. There are many suggestions and much helpful information that I feel I could give by personal contact with the County Units. I welcome any suggestions that you may have and any constructive criticism which might accrue to the benefit of our organization. It is my earnest desire to be of every help possible to you. I hope that you will call upon me whenever I can be of assistance, for as your President it is my privilege not only to lead you, but to serve you as well.

Faithfully yours,

JANET WATKINS STONE,
President.

Public Health Statistics

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia.

The report of the State Health Department's bureau of communicable diseases, as compiled for the month of February, shows the following cases compared with the same month in 1937.

| | 1938 | 1937 |
|------------------------------------|-------|------|
| Typhoid and Paratyphoid | 6 | 11 |
| Diphtheria | 69 | 76 |
| Scarlet Fever | 154 | 143 |
| Measles | 2,035 | 861 |
| Meningitis | 17 | 32 |
| Poliomyelitis | 0 | 2 |
| Rocky Mountain Spotted Fever | 0 | 1 |
| Typhus Fever | 0 | 0 |
| Undulant Fever | 1 | 1 |
| Tularemia | 1 | 3 |
| Smallpox | 4 | 1 |

PNEUMONIA CONTROL FILM

A one reel dramatic motion picture with sound on pneumonia, entitled "A New Day", now is being shown to motion picture audiences throughout Virginia.

It depicts in an interesting manner the details which the general public should know regarding this devastating disease and its treatment. The necessity for the proper care of minor respiratory infection as a means of warding off possible serious complications is stressed. The reasons for prompt diagnosis and treatment by a physician early in the course of pneumonia also are explained. In addition, the efficacy of early sputum typing and of serum administration, as well as the importance of medical and nursing care, are clearly demonstrated.

While many excellent films dealing with health topics have been produced, this picture, sponsored by the United States Public Health Service and the Metropolitan Life Insurance Company, is the first one of its type specifically adapted for use in motion picture theaters.

The film was produced in Hollywood with a cast of well-known actors and tells an impressive story in the best Hollywood manner.

The picture is endorsed by the Pneumonia Commission of the Medical Society of Virginia and the State Department of Health. The cooperation of the theater managers has made this film available to the motion picture audiences. Reports indicate that the public not only is being informed but entertained by this significant experiment in motion picture health education.

ACTIVITIES IN THE VENEREAL DISEASE CLINICS

Conclusive proof of the part the fifty venereal disease clinics are playing in the control problem in Virginia is evidenced by a study of their activities during the past six months.

Patients made a total of 120,177 visits to the clinics either for treatment, diagnosis or advice. 5,104 cases of syphilis and 685 cases of gonorrhea were discovered. Treatments totaled 100,348, of which 58,288 were arsenical and 42,060 bismuth. Darkfield examinations were made on 358 persons. 2,929 smears for gonococci were taken and 39,584 blood tests made for syphilis.

That the required social service follow-up work is being done is indicated by the interviewing of 5,760 contacts and 18,365 visits to delinquents.

Incidentally, with a very few exceptions, the clinics limit their service to those unable to pay private physicians. A satisfactory interest in venereal diseases as a public health problem apparently is being developed.

Truth About Medicine

In addition to the articles previously enumerated, the following have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association:

Bilhuber-Knoll Corporation.

Metrazol Sterile Aqueous Solution, 10 per cent.

Hypodermic Tablets Dilaudid Hydrochloride, 1 mg. (1/64 grain).

Hypodermic Tablets Dilaudid Hydrochloride, 1.25 mg. (1/48 grain).

Lederle Laboratories.

Mixed Grasses Pollen Antigen—Lederle (June Grass, Orchard Grass, Sweet Vernal Grass, Red Top and Timothy in equal parts).

New and Nonofficial Remedies

Mead's Compound Syrup Oleum Percomorphum.—An emulsion of oleum percomorphum 0.65 per cent, olive oil 23.2 per cent, malt syrup 65.35 per cent, with water 8.1 per cent, alcohol 2.1 per cent, pectin 0.4 per cent and gum tragacanth 0.2 per cent (percentages by weight). The mixture is standardized by biologic assay to have a potency of not less than 780 U.S.P. vitamin A and 110 U.S.P. vitamin D units per gram. Mead Johnson & Co., Evansville, Indiana. (*J. A. M. A.*, February 19, 1938, p. 581.)

Accepted Devices for Physical Therapy

The following devices have been accepted by the Council on Physical Therapy for inclusion in its list of accepted devices for physical therapy:

General Electric Fever Cabinet.—This cabinet is designed to be used with the Inductotherm for maintaining heat during fever treatments. It does this by preventing excessive loss of heat from the patient's body, which rests in the cabinet during treatment. The patient's head protrudes through a rubber collar and rests on a pillow. By means of a fan, heater and water container the temperature and humidity within the cabinet are maintained at the desired level. General Electric X-Ray Corporation, Chicago. (*J. A. M. A.*, February 19, 1938, p. 581.)

Propaganda for Reform

Canadian Experience With Zinc Sulfate Sprays for Prevention of Poliomyelitis.—The serious outbreak of poliomyelitis in and around Toronto this year afforded an exceptional opportunity for the study of the prophylactic value of zinc sulfate sprays. The report by Tisdall and his co-workers (*Canad. Pub. Health J.*, November, 1937) on this subject deserves careful study. A trial of nasal spraying was approved by the Department of Health of Ontario on August 29. It was agreed that each child should be sprayed on two occasions, ten or twelve days apart, and that from 0.5 to 1 cc. of the solution should be placed in each naris in each spraying. The solution contained 1 per cent zinc sulfate, 1 per cent pontocaine and 0.5 per cent sodium chloride. The spraying was done according to the technic of Peet, Echols and Richter but dif-

fered from their recommended procedure in that it was not administered on three successive days, since this method was considered impracticable. The attack rate in the period from seven days after the first spraying to thirty days after the second spraying was 2.1 in the sprayed group and 2.9 in the control group. The difference is not statistically significant. The report concludes that since the spraying method employed in this study must be conducted by otolaryngologists or other physicians especially trained in intranasal treatment, requires special facilities, and cannot be done quickly enough to meet the emergency of an outbreak, it cannot be considered a practical public health procedure. (*J. A. M. A.*, December 18, 1937, p. 2072.)

Vitamin D Milk Produced by Feeding Cows Irradiated Yeast.—In 1929 Wachtel reported that the feeding of irradiated dried yeast to cows resulted in the secretion of vitamin D in the milk. This report was confirmed and amplified by the observations of Hart and Steenbock and their associates at the University of Wisconsin. Since 1932 this type of vitamin D milk has been made commercially available. The product is sometimes referred to as "metabolized" vitamin D milk. Numerous investigators have reported on the clinical effectiveness of metabolized vitamin D milk. These investigators have shown that, if there is any difference, unit for unit, between different types of vitamin D milk, the difference is too small to be of practical significance. Metabolized vitamin D milk is produced under the joint sponsorship of Standard Brands, Incorporated and the Wisconsin Alumni Research Foundation. The irradiated dried yeast intended for use in the feeding of cows may be sold by Standard Brands, Incorporated only to dairymen licensed by the Wisconsin Alumni Research Foundation. The vitamin D content of the milk produced, as shown by repeated bioassays, is not less than 400 units of vitamin D per quart. The Council on Foods voted to accept pasteurized metabolized vitamin D milk and to grant the use of the seal of acceptance to licensed dairies that conform to the Rules and Decision of the Council. (*J. A. M. A.*, November 27, 1937, p. 1814.)

Book Announcements

Injection Treatment of Hernia. By CARL O. RICE, M. D., F. A. C. S., Instructor in Surgery, University of Minnesota School of Medicine; Surgeon in Charge of the Surgical Out-Patient Department of the Minneapolis General Hospital; etc. With the assistance of HAMLIN MATTSON, M. D. Philadelphia. F. A. Davis Company. 1937. Octavo of ix-266 pages. 83 illustrations. Cloth. Price, \$4.50.

This book of 250 pages is divided into eleven chapters. The first chapter gives the history of the injection treatment of hernia and, therefore, is of some interest. In the next four chapters the classi-

fication of hernias, the anatomy of the areas in which hernia usually appears, the etiology, and diagnosis of hernia are fully discussed. These chapters are well-written and most of the ideas expressed are generally accepted by the medical profession. These chapters make this book worthwhile to the young surgeon, even though he may be only mildly interested in the injection treatment of hernia.

In chapter six the five main types of trusses are described and their advantages and disadvantages discussed. This chapter is of value to the surgeon, for there is little doubt that in some cases of hernia the application of a well-fitted truss is the treatment of choice.

Chapter seven contains a description of the armamentarium and technique for the injection treatment of hernia. Considerable space is devoted to a discussion of the various solutions which have been tried and the trade names of some of the solutions are used. In some instances, this was done apparently because the formula of the solutions was not available. Under such circumstances it would have been advisable to consider only those solutions of known composition.

Chapters eight and nine are devoted to a discussion of the complications and sequelae and to the results of this method of treatment. In the discussion of results, the author does not make clear how long a time must elapse before the patient is considered cured; but apparently a year is considered sufficient, for he refers to the statistics published by Gibson and Fletcher which indicated that approximately 73 per cent of recurrences following surgical repair developed during the first year. However, the statistics published recently by Burdick¹ *et al.* showed that 62 per cent of the recurrences developed after the first year.

In chapter ten the author describes the histopathology of tissue removed at varying periods of time after the injections and presents a number of good photomicrographs of such tissue.

The final chapter contains a valuable summary of the medico-legal aspects of hernia and the compensation laws in the various states in relation to hernia.

I. A. BIGGER.

1. *Ann. Surg.*, 106: 333, 1937.

Mental Therapy. Studies in Fifty Cases. By LOUIS S. LONDON, M. D., Formerly Passed Assistant Surgeon (R) United States Public Health Service; Medical Officer United States Veterans Bureau; Assistant Physician Central Islip State Hospital, Central Islip, N. Y., and Manhattan State Hospital, Wards Island, N. Y. In Two Volumes. Covici, Friede, Inc. New York, N. Y. 1937. Volumes I and II—Octavo of 774 pages. Cloth. Price, \$12.50.

One is somewhat surprised at the title of the book, which on the outside is simply "Mental Therapy," in comparison to the contents, because the whole of the two volumes is devoted to the study of mental diseases from a psychoanalytic and psychotherapeutic standpoint. No space is given to physical consideration or to endocrine therapy. One would rather look for such new things as have been introduced in mental therapy as hyperthermia and insulin treatment in two volumes of this title. Nothing of this sort is taken up at all. From the psychoanalytic side of the psychosexual school with a recitation of fifty cases, the work is valuable. It is certainly not a book for undergraduate students, and possibly it would be best for reference use for those who are limiting their practice to this particular phase of medicine. Those practicing in branches not directly related to that part of mental medicine concerned with psychoanalysis would probably not understand the book. The question as to the percentage of psychiatric cases that come under the Freudian sex classification is an open one.

Dr. London has held many important positions under the government and in state hospitals and his cases are well worked out and reported. The work constitutes, therefore, a contribution from the case history of the psychoanalytic viewpoint to the particular subject to which it is addressed, but one cannot help from wishing that Dr. London, like Dr. Oskar Diethelm in his book, "Treatment in Psychiatry," would write a competent treatise on the therapy of psychiatric disease in general bringing in the newer ideas of insulin shock therapy, prolonged sleep therapy, lobectomy, and the various methods of hyperthermy.

BEVERLEY R. TUCKER.

Virginia Medical Monthly

Founded by LANDON B. EDWARDS, M. D., April, 1874

Owned by MEDICAL SOCIETY OF VIRGINIA since November, 1919

WYNDHAM B. BLANTON, M. D., *Editor*

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All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Monthly, 1200 East Clay Street, Richmond, Va.

This journal is not responsible for the opinions and statements of its contributors.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Subscription Price: \$2.00 per annum in advance. Single Copies 25c.

VOLUME 65

APRIL, 1938

No. 4

Editorial

Wanted—An Antipruritic.

The author of *Life and Death* now gives us *More of My Life*. The first named book is an autobiography and only a rash man writes a life of himself unless he stands upon the threshold of the Hereafter over which he can quickly jump to escape the darts of criticism. The second volume, as its title suggests, is an effort to make another book out of the scraps that fell from the first. Like a hash made from Sunday's chicken it may do very well for family consumption but it will not do to set before a guest. Andrea Majocchi is an Italian surgeon, his publishers would have us believe of international reputation. In his writing there is the love of the dramatic and the deep emotionalism of a devout churchman. Is there no antipruritic for the itch of autobiographical writing? It looks as if an increasing number of surgeons and doctors need a dose for what ails them.

The Virginia Academy of Sciences.

Last month's issue of the *Virginia Medical Monthly* carried a letter by Dr. J. Shelton Horsley pointing out what he thought should be the future policy of the Section on Medical Sciences of the Virginia Academy of Science. He advocated more clinical papers of a sort that are not commonly given at medical meetings, brief clinical observations of the kind that the general practitioner is capable of making without laboratory or mechanical aids, bed-

side observation in anatomy, physiology, embryology and the other fundamental sciences.

Dr. Horsley's letter gives us the opportunity to remind the medical profession of Virginia of the fine accomplishments of the Virginia Academy of Science and to urge upon interested doctors the opportunity the Academy affords for service in this State. Seventy doctors are members. There is room for many more.

"The Virginia Academy of Science was organized in May, 1923, through the pioneer initiative of the Society of Virginia Biologists at their fourth annual meeting at the College of William and Mary. Since that time the Academy has enjoyed a phenomenal growth until now it represents the creative effort and official expression of the vast majority of scientists in the Commonwealth.

"At its annual meetings, held each May at academic centers easily accessible to all, the teachers of science and other science lovers in the State gather to hear the latest research in all fields presented. In the seven sections of the Academy, papers of rich and varied interest are read, new experimental apparatus is demonstrated, scientific films are shown and vital discussions of research topics are held. At the public sessions, nationally-known scientists from outside the State are the guest speakers.

"The cause of science is served through the stimulus to more and better research work and through

the cross-fertilization of scientific ideas afforded by the meetings. Finally, the scattered efforts of the individual members when brought together in the Academy program make possible a dignified presentation of the scientific work that is being currently done in the State of Virginia.

"The Academy invites to membership all persons interested in the promotion of science and the scientific spirit in Virginia.

"The Academy is affiliated with the American Association for the Advancement of Science and in working agreement with the other State academies of science.

"The Research Committee awards at each meeting of the Academy, a prize of fifty dollars for an especially meritorious paper presented at that meeting and it makes cash awards to various persons who need equipment or supplies for the successful pursuit of some worthy scientific project. It also awards the Jefferson Gold Medal."

Alcohol, the Legislature and a Book.

Another curious by-product of the recent sojourn of the Senate and the House of Delegates in the capital of Virginia was the discussion and final action of the Legislature over a book compiled at its direction by Dr. J. A. Waddell of the University of Virginia and Dr. H. B. Haag of the Medical College of Virginia on *Alcohol in Moderation and Excess*. It was never made certain whether those who voted against publishing this report in book form to be used "as a basis for material to be taught in the public schools" had read it or not. The only thing that was apparently clear was that those who are against alcohol quantitatively and qualitatively were more concerned with obtaining a condemnation of alcohol's effects upon the human body under all circumstances, than they were in securing an authoritative study of the effects of alcohol in varying concentration upon the human system.

Fortunately the William Byrd Press has rescued Drs. Waddell and Haag's book from the oblivion to which the action of the General Assembly was calculated to consign it, have published it, and offer it for sale at \$1.00 a copy.

Between its neat covers there are 184 pages of simple, concise facts presenting the truth about the manufacture of alcohol and its action on the various systems of the body in moderation and in excess. The book is not propaganda and should be useful

to all those seeking reliable information regarding a most important chemical with industrial, scientific and domestic uses of vast importance and with still more important social implications.

Moral Aphonía.

Mr. Frank P. Moncure of Stafford County, Virginia conceived the notion that people living in Virginia who were insane, who were infected with tuberculosis in the communicable stage, or who had gonorrhea or syphilis should not be allowed to marry and spread these diseases. Of course it was unusual for a layman to feel this way, and it was rather dangerous to think of a statutory amendment to the code of Virginia which would interfere with personal liberty to the extent of rendering the spread of infection or the transmission of insanity through marriage impossible. Nevertheless, Mr. Moncure persisted and his bill got into the Calendar of the House of Delegates. Mr. Moncure must have been surprised to find that not only were there laymen but that there were physicians who took issue with him upon the soundness of the proposed legislation. Being a practical politician, Mr. Moncure trimmed his bill to meet the opposition it encountered, and in its final form it was reduced to a measure which proposed simply to prevent those infected with syphilis from marrying, and had it passed in this form it would very materially have assisted in the state-wide campaign to eradicate Lues from Virginia. But Mr. Moncure's bill was defeated. He is said to have attributed his failure to win enough votes to enact his desired law to the influence of certain petty officials back home who somehow had calculated that a law which would require examination prior to marriage, and prevent those infected with syphilis from marrying, among a people 10 per cent infected with syphilis, would seriously reduce the incidence of marriage in their respective localities, which in turn would materially affect the incomes derived from issuing marriage licenses. We are inclined to believe that the failure of this bill was due to lack of understanding of the seriousness of the problem of syphilis by the laity, and to a gross failure on the part of the medical profession to assume a militant and aggressive attitude when matters of grave public concern over which they are the final arbiters are presented to the General Assembly. On matters like this the Medical Society of Virginia must speak and speak fearlessly. Local

medical societies must educate their localities and two years hence such a bill as this will pass the Virginia Legislature without serious opposition.

Another Matter for Legislation.

Several months ago readers of the most respectable *American Journal of the Medical Sciences*, oldest of our medical periodicals, blinked and rubbed their eyes to find an article dealing in a scientific manner with the manufacture of contraceptives, the fraud and safety of these products.

About the same time one of America's *de luxe* magazines published an article, purporting to have the endorsement of the editor of the *Journal of the American Medical Association*, "in the interests of the health and well-being of persons who are exposed to the products of the birth control industry," scrutinizing what is said to be a \$250,000,000 business for "social responsibility" and for the need of some rather drastic legislation.

The first article made it plain that only very few

mechanical contraceptives are made of reliable material. The second article pointed out what an enormous industry this birth control business has become with its "636 known brands of products and devices for the female, put up by the million in bottles, tubes, jars and boxes," and what unconscionable profits adhere in the sale of all types of contraceptive apparatus. The announcement in the fall of 1937 by the Federal Food and Drugs Administration that the standards of quality of these products "are subject to the same scrutiny as those of a drug" was an important forward step. Since the American Medical Association has now recognized birth control as a legitimate concern of the medical profession there is hope not only that its proper technique may be popularized in the profession but that the pitfall of worthless materials and the passion for profiteering among those who handle these goods may be brought under legislative control.

Department of Clinical and Medical Education of the Medical Society of Virginia

Obstetrics and Gynecology.

During the five weeks period from February 14 to March 19, Dr. Shamburger has conducted a post-graduate course in the City of Danville and the counties of Bedford, Campbell, Pittsylvania, and Henry. Meetings were held at Bedford, Altavista, Chatham, Danville, and Martinsville. Up to the time of writing this report the following doctors have attended the course:

BEDFORD

| | |
|------------------|-------------------|
| Dr. W. V. Rucker | Dr. E. L. Johnson |
| Dr. J. G. Jantz | Dr. T. P. West |
| Dr. M. P. Rucker | |

ALTAVISTA

| | |
|------------------|----------------------|
| Dr. Q. H. Barney | Dr. W. O. Smith |
| Dr. E. F. Neal | Dr. J. P. Kent |
| Dr. C. W. Haden | Dr. Carleton Moorman |
| Dr. L. D. Morgan | Dr. A. M. Owen |

DANVILLE

| | |
|---------------------|--------------------|
| Dr. P. W. Miles | Dr. J. L. Nall |
| Dr. I. C. Harrison | Dr. H. J. Langston |
| Dr. W. C. Yeatts | Dr. Walter McMann |
| Dr. W. B. Sager | Dr. Wharton |
| Dr. J. J. Neal | Dr. R. W. Garnett |
| Dr. J. W. Robertson | |

CHATHAM

| | |
|-------------------|---------------------|
| Dr. B. R. Allen | Dr. G. V. Thompson |
| Dr. C. D. Bennett | Dr. W. J. Wigington |
| Dr. H. H. Hamner | Dr. J. C. Anderson |

MARTINSVILLE

| | |
|-----------------------|-----------------------|
| Dr. J. A. Shackelford | Dr. C. R. Titus |
| Dr. F. B. Teague | Dr. M. H. Mund |
| Dr. D. H. Mason | Dr. J. M. Shackelford |
| Dr. J. W. Simmons | Dr. Wilson |
| Dr. A. W. Rucker | Dr. E. M. McDaniel |
| Dr. A. C. Stutsman | Dr. D. L. Fleshman |

Plans are now being made for the next circuit to be held in Orange, Albemarle, and Augusta counties beginning the week of March 28.

Pediatrics.

Dr. Hightower at this time is completing a circuit in the Northern Neck of Virginia. Meetings have been held at Fredericksburg, Oak Grove, Warsaw, Heathsville, and Kilmarnock. The following doctors have been in attendance:

FREDERICKSBURG

| | |
|-----------------|------------------|
| Dr. T. B. Payne | Dr. E. R. Ware |
| Dr. T. W. Dew | Dr. W. M. Junkin |

OAK GROVE

Dr. V. O. Carruthers, Jr. Dr. E. F. Gouldman
Dr. C. G. Williams

WARSAW

Dr. J. H. Hare Dr. E. T. Ames
Dr. H. L. Segar Dr. V. L. Litsinger
Dr. W. N. Chinn

HEATHSVILLE

Dr. R. E. Booker, Sr. Dr. H. Mooers
Dr. R. E. Booker, Jr. Dr. W. B. Richardson
Dr. C. T. Pierce Dr. B. H. Hubbard
Dr. R. L. Hudnall

KILMARNOCK

Dr. M. C. Oldham Dr. H. W. Kinderman
Dr. E. R. Moorman Dr. C. T. Pierce
Dr. P. E. Lilly Dr. L. S. Liggan

During the period from March 21 to April 23, Dr. Hightower will conduct a course in the Mid-Tidewater area. Arrangements have been made for

meetings to be held at Bowling Green, Tappahannock, Saluda, Gloucester, and West Point.

Internal Medicine.

The Department of Clinical and Medical Education is now in a position to offer a few short courses in Internal Medicine in various communities of the State. In these courses the instructors will be drawn from the two medical schools of the State. Local societies wishing to have a course offered should communicate with the Executive Secretary. Preference will be given to those societies making the first requests.

When requesting these courses it is suggested that local societies specify the topics they wish discussed. Since only a few courses in this subject can be offered this year it is important that requests be made as early as possible.

GEORGE B. ZEHMER,
Executive Secretary.

Proceedings of Societies

Botetourt County Medical Society.

At the meeting of this Society on March 12, Dr. S. F. Driver of Troutville was elected president, and Dr. W. H. Saunders of Fincastle was named secretary for the coming year.

Fourth District Medical Society.

At the meeting of the Fourth District Medical Society, held on February 15, in Hopewell, the following scientific program was presented: Report of a Case of Primary Streptococcic Peritonitis by Dr. W. M. Phipps; Uses and Dangers of Sulfanilamide by Dr. F. M. Howell; and Serum Therapy of Pneumonia by Dr. C. I. Pirkle. All of these doctors are from Hopewell. Dr. J. Newton Dunn of Blackstone was elected to membership. Dr. J. L. Hamner, Mannboro, is president of the Society and Dr. C. E. Martin, North Emporia, secretary.

James City-New Kent County Medical Society.

At the annual meeting of this Society recently, Dr. E. B. Kilby of Toano was elected president, and Dr. I. S. Zfass of Williamsburg, secretary.

The Lynchburg Academy of Medicine

Held its regular meeting in the Elks' Club, March 8, at 8:00 P. M., with the President, Dr. Elisha Barksdale, presiding. Drs. Claude Gibson Hooten of Lynchburg and Dennis H. Robinson of Bedford, were elected to membership.

Dr. J. Edwin Wood of University of Virginia presented an extremely interesting and instructive paper on "Body Weight and Hypertension," showing their experimental work on dogs in relation to hypertension and body weight.

All-Day Clinic.

Drs. N. F. Rodman, chairman, A. B. Hodges, C. C. Smith and M. S. Andrews formed the committee in charge of the Annual All-Day Clinic of the Norfolk County Medical Society on March 28. Clinics were held at St. Vincent's Hospital in the morning, followed by a clinical conference with Dr. T. A. Boggs, associate professor of medicine at Johns Hopkins University, in charge. Luncheon was served those attending as a courtesy of the Norfolk General Hospital, after which a surgical clinic was held there and a medical clinic at St.

Vincent's. Following dinner at Town Club, an evening session was held at which the invited speakers were Dr. Hubert A. Royster of Raleigh, N. C., and Dr. Joseph Stokes, Jr., associate professor of pediatrics and physician-in-chief at the Children's Hospital in Philadelphia.

The Orange County Medical Society

At its February meeting voted a change from the monthly plan of meeting to a quarterly schedule, as it was the feeling of most of those present that with a small membership more could be accomplished in the line of helpful programs by having fewer meetings, and making these more interesting and worthwhile.

At the April meeting, Dr. Lewis Holladay of Orange will have charge and give as his paper "The Problems of the Rural Physician of Yesteryear".

Richmond Academy of Medicine.

At the meeting of the Academy on March 8, Dr. Wright Clarkson of Petersburg spoke on "Cancer Control in Virginia". This address was followed by a case report on "Pneumococcus Vaginitis" by Dr. William Bickers, and a paper on the "Diagnosis and Treatment of Tuberculous Lesions of the Tracheo-bronchial Tree" by Dr. Porter P. Vinson.

Speakers at the meeting on March 22 were Dr. Walter L. Nalls on "Chronic Cyst Disease of the Lung"; Dr. Charles M. Nelson on "The Cause of Chills Following Intravenous Therapy"; and Dr.

Joseph Bear on "Further Comments on Human Sterility". The usual buffet supper followed both meetings.

New members elected at these meetings are: Dr. Homer E. Ferguson, Dr. B. A. Hord, Dr. Richard C. Neale, and Dr. L. L. Shamburger.

Roanoke Academy of Medicine.

At the March meeting of the Academy, the following program was presented: Dr. Thomas N. Spessard on "Hysteria"; Dr. Roy M. Hoover on "Colles' Fracture"; Dr. W. L. Powell on "Fissure in Ano"; and Dr. K. D. Graves on "Report on Tuberculosis Survey".

Dr. N. A. Beeton, Vinton, was recently elected to membership.

The Southside Virginia Medical Association

Met in Franklin on March 15, with about fifty doctors in attendance. A most interesting and instructive program was arranged and the papers and discussions which followed were much enjoyed. At the conclusion of the program, the visiting physicians were entertained at a delightful dinner at the Stonewall Hotel.

The next meeting will be held at the Central State Hospital in Petersburg on the second Tuesday in June.

Dr. W. J. Ozlin of South Hill is president of this Association and Dr. R. L. Raiford of Franklin, secretary.

News Notes

Committees for State Society Meeting.

It was recently announced that Dr. I. C. Harrison had been appointed general chairman in charge of local arrangements for the meeting of the Medical Society of Virginia in Danville, October 4, 5, and 6. The following have been appointed to serve with him:

Halls and Hotels: Drs. P. W. Miles and H. A. Wiseman

Commercial Exhibits: Drs. J. J. Neal and R. W. Upchurch

Scientific Exhibits: Drs. E. E. Barksdale and Charles W. Purcell

Entertainment: Drs. E. H. Miller and J. M. Robinson

Ladies: Mrs. James C. Giles

These committees have already started their work and a "big" meeting is anticipated.

Medical College of Virginia News.

The third in the series of symposia put on by the various school of the college in celebration of the Centennial year will be given by the school of nursing on April 11, 1938.

During the morning there will be a series of papers given by members of the nursing faculty of the college, and luncheon will be served at noon for visitors and alumnae. During the afternoon tours will be made of the hospital division and other units of the institution.

At night there will be a general meeting at the John Marshall High School auditorium with President W. T. Sanger, presiding. Dr. Roshier W. Miller, president of the general alumni association, will extend greetings from that association. Dean Frances Helen Zeigler of the school of nursing will review the history of the nursing school and introduce the guest speaker of the evening, Miss Sophie C. Nelson, R. N., who will speak on "Nursing—Old and New".

The fourth and final symposium will be combined with the annual Stuart McGuire lectures, April 28 to 30.

The symposium will be conducted by a group of distinguished guests from important medical centers. On April 28 at 8:30 P. M., Dr. George R. Minot, Professor of Medicine, Harvard Medical School, and Director of the Thorndike Memorial Laboratory, will speak on "The Etiology and Treatment of Anemia".

On the morning of April 29, beginning at ten o'clock, Dr. O. H. Perry Pepper, Professor of Medicine, University of Pennsylvania School of Medicine, will speak on "A Survey of the So-Called Hemolytic Anemias", followed by Dr. Harvey E. Jordan, Assistant Dean of the Department of Medicine and Professor of Histology and Embryology, University of Virginia, speaking on "Blood Formation in Birds with Special Reference to the evidence for a Genetic Relation Between Lymphocytes and Erythrocytes". In the afternoon, Dr. Nathan Rosenthal of Mt. Sinai Hospital, New York City, will speak on "Leukemoid Reactions in Various Diseases", and will be followed by Dr. Alexis F. Hartmann, Associate Professor of Pediatrics, Washington University School of Medicine, on "Some Clinical Studies of Subjects with Change in their Acid-Base Balance." At night Dr. George R. Minot will give a second lecture on "Nutritional Deficiencies".

On Saturday morning, April 30, Dr. Edward D. Churchill, John Homans Professor of Surgery, Harvard Medical School, will speak on "The Principles of Surgical Treatment of Hyperparathyroidism", followed by Dr. Harvey B. Stone, Associate Professor of Surgery, Johns Hopkins University School of Medicine, speaking on "Transplantation of Parathyroid Glands". At noon Dr. Walter Bauer, Assistant Professor of Medicine, Harvard Medical School, will speak on "The Nature of Degenerative Joint Disease (Hypertrophic Arthritis)".

Dr. J. C. Coulter,

Charlottesville, was one of the principal speakers at the meeting of the Tri-City Association of Odd Fellows, held in Petersburg, on March 8.

Dr. F. L. Thurman,

Buena Vista, at a recent meeting of the Natural Bridge Chapter of the Daughters of the American Revolution, read a paper on "Some Historical Homes in Rockbridge County Around the Period of the Revolutionary War".

"Let's Go To California".

Let's go on the American Express Travel Tour on the Physicians' De Luxe Special Trains which leave Chicago on June 6. We'll arrive in time for the San Francisco Convention of the American Medical Association but en route will see the Indian Detour, Grand Canyon, Los Angeles, Riverside, and Santa Catalina Island. After leaving San Francisco, it will be a problem to know which route to take as there are two—one takes us via Portland, Seattle, Victoria, Vancouver, Canadian Rockies, Lake Louise and Banff Springs—the other via Yellowstone National Park, Salt Lake City, Royal Gorge, Colorado Springs and Denver.

No physician wants to miss the meeting of the American Medical Association and no physician can afford to miss seeing "America En Route". The Special De Luxe trains have the most modern air conditioned equipment, including Pullman sleeping cars, drawing rooms, buffet club car, combination lounge and observation car and diners—everything that is necessary for a most enjoyable time.

Have you received your folder with full information about the tour? If not, write the American Express Travel Service, 1414 F St., N. W., Washington, D. C. They will be glad to help you.

American College of Physicians.

The twenty-second annual session of the College is being held in New York, April 4-8, at the Waldorf-Astoria, under the presidency of Dr. James Howard Means, of Boston.

Dr. Joseph E. Cox,

Who graduated in medicine from the University of Virginia in 1934, has located in Waynesboro where he is limiting his practice to pediatrics.

Local Health Department News.

The Prince William County Health Department

has been organized and was officially opened on February 16, with headquarters at Manassas. Dr. E. M. Holmes, Jr., health officer of the Fairfax County Health Department, is directing the activities of the Department until the regular director is appointed.

The Prince George-Hopewell Health Department has been organized and was officially opened March 1, with headquarters at Hopewell. Dr. J. H. Bonner has been appointed health officer of this new department.

Dr. Francis J. Clements, recently of Palmyra, has been appointed health officer of the Sussex County Health Department, effective March 15, succeeding Dr. John H. Bonner who was transferred to the Prince George-Hopewell Health Department.

Promotions in U. S. Public Health Service.

Among recent promotions in the U. S. Public Health Service, the following are graduates of the University of Virginia, School of Medicine:

Dr. Marion F. Haralson, class of 1915, promoted and commissioned as Senior Surgeon in the Regular Corps.

Dr. Thomas A. Moneymaker, class of 1933, promoted and commissioned as Passed Assistant Surgeon in the Reserve Corps for active duty at the U. S. Employees' Compensation Commission.

Appointment at New York Polyclinic.

Dr. Joseph F. McCarthy has been appointed professor of urology and attending urologist to the New York Polyclinic Medical School and Hospital.

Dr. Carl W. LaFratta

Announces the removal of his office to 1630 West Grace Street, Richmond.

Invitation to Washington Meeting.

Under the department of *Correspondence* in this issue of the MONTHLY appears an invitation for our members to attend the annual scientific assembly of the Medical Society of the District of Columbia. An interesting program has been arranged and we hope many of our members may avail themselves of this opportunity.

Dr. James W. Smith,

Hayes Store, has been appointed to the Board of Health of Gloucester County by State Health Commission, Dr. I. C. Riggin.

Dr. Smith has also been elected as a member of

the Board of the Virginia Salt-Water Fishing Association from his county.

Dr. B. J. Montgomery

Of Baskerville has been named as one of the directors of the Mecklenburg Cooperative Electric Company, organized recently.

Parke, Davis & Company Elects New President and New Finance Chairman.

Dr. A. William Lescohier was elected President of Parke, Davis & Company, and Norman H. F. McLeod Chairman of the Finance Committee, at a meeting of the Company's Board of Directors in Detroit on March 1. Both men have been actively connected with the Company for about thirty years.

Dr. Lescohier succeeds Oscar W. Smith, who had been President of the Company for sixteen years until his death on February 7 of this year. Mr. McLeod continues as Secretary and Treasurer of the Company, as well as a Director, in addition to his new post as Chairman of the Finance Committee.

Dr. L. G. Roberts

Of Moormans River, member of the Albemarle County Board of Supervisors, has been selected to succeed Mr. Raymond L. Jackson, resigned, as county chairman of the local Democratic committee.

Dr. Allen Barker,

Petersburg, recently spoke before the Kiwanis Club of that city on the development and modern uses of X-ray.

Dr. James B. Shuler,

Class of '35, University of Virginia Department of Medicine, who has been stationed at the U. S. Naval Medical School in Washington, has been transferred to the Marine Detachment, Rifle Range, at Cape May, N. J.

Dr. William S. Burton,

Who interned at Johnston-Willis Hospital, Richmond, after his graduation from the Medical College of Virginia last year, has located at Powhatan, where he has taken over the practice of the late Dr. J. E. Tilman.

Dr. N. D. Nelms,

Class of '36, University of Virginia Department of Medicine, who later interned at Elizabeth Buxton Hospital, Newport News, has located at Mathews where he is engaged in general practice.

Dr. Charles Preston Mangum,

Richmond, announces removal of his office to 1822 Monument Avenue, this city. His practice is limited to pediatrics.

International Health Broadcast on Heart Disease in Children.

Leading British and American physicians, 6,000 miles apart, will confer via the radio on the greatest menace to child health, Rheumatic Heart Disease. This conference, the first international broadcast on any health problem, will be heard over the National Broadcasting Company, WEAf and the Red Network, on Monday evening, May 2, at seven thirty o'clock Eastern Daylight Saving Time. Arranged by the American Heart Association, the conference-broadcast will observe National Child Health Day.

Lord Thomas Jeeves Horder, Physician-in-ordinary to the King of England, will open the conference speaking from London. Dr. Homer F. Swift of the Rockefeller Institute, New York City, and Dr. T. Duckett Jones (son of Dr. and Mrs. J. Bolling Jones of Petersburg) of the House of the Good Samaritan, Boston, will then speak from Atlantic City where they will be attending the convention of the American Society of Clinical Investigation. Dr. William J. Kerr, President of the American Heart Association, will take up the discussion from San Francisco.

McGuire Unit Holds Annual Meeting.

The Veterans of the United States Hospital Base No. 45, known as the McGuire Unit, held their annual meeting at St. Luke's Hospital, Richmond, on February 26. All physicians, enlisted personnel and nurses, who served with the McGuire Unit overseas during the World War, are members of the organization and Dr. Stuart McGuire is the Honorary Commander. Dr. Greer Baughman, retiring commander, presided at the banquet which was attended by approximately seventy-five members. Mr. Robert Quarles was elected commander and Dr. William B. Porter vice-commander.

Married.

Dr. Thomas Morton Raines, Wakefield, and Miss Alice Virginia Hill, Dendron, February 24.

May Day—Child Health Day 1938.

"Speed Children on the Road to Health" is the slogan of the 1938 May Day—Child Health Day—to be observed on May 1. The objective is for every

community to make full use of its resources in order to insure to children safe birth, normal growth, and protection against disease and accident in their progress from infancy to maturity. For information on State programs, write to State May Day Chairman, State Department of Health, Richmond.

Dr. Quinton E. Cooke,

Of the Medical College of Virginia, class of '37, who interned for a time at Johnston-Willis Hospital and was resident at Pine Camp Hospital, Richmond, has located for general practice in Murfreesboro, N. C.

The American Association on Mental Deficiency

Is to hold its sixty-second annual meeting in Richmond, Va., April 20 to 23, inclusive, with headquarters at the Jefferson Hotel. In addition to the business sessions, there will be presented a number of interesting papers, round table discussions, demonstrations and exhibits. In the way of diversion, sight-seeing trips to places of interest near Richmond have been arranged and there will be the President's dinner with dancing and cards on the evening of the 22nd. Dr. Harry C. Storrs of Thiells, N. Y., is president, and Dr. E. Arthur Whitney of Elwyn, Pa., secretary. All doctors in Virginia are invited to attend the sessions.

Dr. Marion B. Sulzberger,

Professor of clinical dermatology and syphilology at Columbia University, New York, was the guest speaker before the Norfolk County Medical Society on March 21, his subject being "The Management of Common Dermatoses by the General Practitioner".

The Academy of Dermatology and Syphilology

Was organized at a meeting held in Detroit on January 14 and 15, which was attended by more than three hundred dermatologists. Dr. Howard Fox of New York was elected president, and Dr. Earl D. Osborne, of Buffalo, secretary.

Dr. H. Hudnall Ware, Jr.,

Richmond, announces removal of his offices to 816 West Franklin Street, this city, effective April 1.

Spring Graduate Course.

The Gill Memorial Eye, Ear and Throat Hospital of Roanoke is to hold its twelfth annual Spring

Graduate Course in Ophthalmology, Otology, Rhinology, Laryngology, Facio-Maxillary Surgery, Bronchoscopy and Esophagoscopy from April 4 to 9. In addition to the doctors of the Hospital Staff, the faculty includes twelve prominent specialists from the eastern states. The class, which is limited to fifty, is listed below:

Dr. Byron B. Bobb, Harrisburg, Pa.
 Dr. Karl S. Blackwell, Richmond, Va.
 Dr. Hugh J. Baker, Hamilton, Ohio.
 Dr. Ben W. Bird, Princeton, W. Va.
 Dr. Arthur A. Bobb, Reading, Pa.
 Dr. A. L. Bass, Louisville, Ky.
 Dr. L. M. Coffey, Peoria, Ill.
 Dr. S. M. Cottrell, Richmond, Va.
 Dr. G. E. Campbell, Johnson City, Tenn.
 Dr. C. J. Chamberlin, Hamilton, Ohio.
 Dr. Frank W. Dimmitt, Providence, R. I.
 Dr. Gerald F. Denyes, Toledo, Ohio.
 Dr. H. Eugene Douds, Beaver Falls, Pa.
 Dr. John P. Donahoe, Scranton, Pa.
 Dr. H. C. Eastman, Galesburg, Ill.
 Dr. Wallace W. Gill, Richmond, Va.
 Dr. Milus L. Gunn, Harlan, Ky.
 Dr. J. H. Hester, Louisville, Ky.
 Dr. C. M. Hawes, Huntington, W. Va.
 Dr. Carl C. Koester, Batavia, N. Y.
 Dr. J. C. Kanigsberg, Freeport, N. Y.
 Dr. Edwin R. Lescher, Elgin, Ill.
 Dr. C. D. Miller, Carbondale, Pa.
 Dr. Edward L. McCarthy, Canonsburg, Pa.
 Dr. M. H. Newton, Little Falls, N. Y.
 Dr. T. J. Overstreet, Lexington, Ky.
 Dr. Hugh H. Richeson, Louisville, Ky.
 Dr. J. W. Raymond, Johnstown, Pa.
 Dr. Charles Roser, Louisville, Ky.
 Dr. J. H. Simpson, Louisville, Ky.
 Dr. Chas. D. Sneller, Peoria, Ill.
 Dr. J. T. Shelburne, Martinsville, Va.
 Dr. W. Hamilton Smith, Hagerstown, Md.
 Dr. D. E. Staton, Columbus, Ohio.
 Dr. J. Allen Smith, Macon, Ga.
 Dr. E. W. Tucker, Fairfield, Ala.
 Dr. F. W. Urton, Louisville, Ky.
 Dr. K. L. Van Horn, Parkersburg, W. Va.
 Dr. Minor E. White, Kankakee, Ill.
 Dr. Claude T. Wolfe, Louisville, Ky.
 Dr. Wm. R. Weisiger, Richmond, Va.
 Dr. Otis M. Wilson, Wausau, Wisc.
 Dr. A. G. Wilde, Jackson, Miss.
 Dr. E. Vermillion, Welch, W. Va.
 Dr. J. R. Vermillion, Princeton, W. Va.
 Dr. C. C. Swann, Asheville, N. C.
 Dr. John B. Gooch, New Orleans, La.
 Dr. Merle Russell, Erie, Pa.
 Dr. H. H. Morris, Portsmouth, Ohio.
 Dr. Thomas E. Hughes, Richmond, Va.

Dr. Winfred Overholser,

Recently appointed superintendent of St. Elizabeth's Hospital, Washington, D. C., has been named as professor of psychiatry and executive officer of the department of psychiatry at the George Washington University, School of Medicine, effective September, 1938.

Dr. Joseph F. Geisinger,

Of Richmond, addressed the Medical Society of the District of Columbia at a recent meeting, his subject being "Unsuspected Massive Pathology in the Upper Urinary Tract".

Physician Wanted.

Excellent opening in Southside Virginia for sober industrious physician. Practice established forty-two years. For special inducement, apply to "Drug Store", care this journal. (*Adv.*)

Physician Wanted.

We have been advised that a physician is needed for general practice at a small town in central Virginia. Further information may be secured from Dr. J. H. Yeatman, Fork Union, Va. (*Adv.*)

Home for Convalescences.

A home for the care and treatment of chronic aged and convalescences has been opened at Arrington, Nelson County, Va., under the care of Dr. and Mrs. Fred M. Horsley. Information upon request. (*Adv.*)

Obituary Record

Dr. Peyton Stark Lewis,

Well-known physician of Richmond, died March 9, as a result of a heart attack. He had been forced to give up his practice several years ago on account of heart trouble but had recently resumed his work. Dr. Lewis was forty-eight years of age and a graduate of the Medical College of Virginia in 1919. He had been a member of the Medical Society of Virginia for sixteen years. His wife survives him.

Dr. Julian E. Tilman,

Prominent physician of Powhatan County, died February 25, after an illness of several months. He

was sixty-one years of age and graduated from the Medical College of Virginia in 1900. Dr. Tilman was active in civic and political life of Powhatan, having served as county coroner and chairman of the board of health. His wife and five children survive him.

Dr. Louis Christian Brand.

Word has been received of the death of Dr. Brand in Kwangju, Korea, on February 28, but no details were given. He had been a missionary to Korea since 1924 and was chief surgeon of the E. L. Graham Hospital which he founded. Dr. Brand was forty-three years of age and a graduate of the University of Virginia, Department of Medicine, in 1923. He was a member of the Medical Society of Virginia. His wife and three children survive him.

Dr. Michael A. Burns,

Professor of Neurology at the Jefferson Medical College of Philadelphia, died on March 7, 1938, at the age of 53. He graduated from Jefferson Medical College in 1907 and entered the neurological service there in 1908. He was appointed professor of Neurology in May, 1934.

Resolutions to Memory of Dr. R. Lee Seward.

The following resolutions were adopted by the Isle of Wight County School Board in respect to the memory of Dr. R. Lee Seward, whose death occurred on January 31:

WHEREAS, God in His Infinite Wisdom and Love has seen fit to call from our midst to His Work Above our fellow Board Member and co-worker, Dr. R. Lee Seward, and

WHEREAS, this faithful friend and loyal school official has endeared himself to us by both his private and public life, and

WHEREAS, he has served faithfully the schools of our County for twenty-five years as a member of the Newport District School Board and later the Isle of Wight County School Board, and

WHEREAS, he has been Chairman of the Isle of Wight County School Board since its constitution, and has presided over its deliberations with dignity and diligence;

BE IT HEREBY RESOLVED by the Isle of Wight County School Board in regular session this tenth day of February, 1938,

That we tender to the family in their loss and bereavement our heartfelt sympathy,

And trust, in addition to the Comfort that comes to them from Our Heavenly Father,

That they will find consolation in the knowledge of the services of Dr. Seward to his Community and his county;

of his ministrations for fifty years as a physician to our people; of his services for twenty-five years as a school official building the educational facilities of his county; of his activities and interests in his beloved Church; of his contacts with many organizations working for a solution of the economic problems of his time; of his devotion to and love for his home, his church, his community, his county, his State and the South of his fathers; of his thoughtfulness as a husband, his devotion as a father, and his loyalty as a friend; that he carried himself in all these relationships as to be honored and esteemed by all who knew him; and

BE IT FURTHER RESOLVED, that a copy of these resolutions be spread upon the minutes of the County School Board of Isle of Wight County and a copy sent to the family.

ISLE OF WIGHT COUNTY SCHOOL BOARD
REA PARKER, *Acting Chairman.*
L. T. HALL, *Clerk.*

Resolutions on Dr. F. F. Davis.

The Mid-Tidewater Medical Society, at its meeting on January 25, adopted the following resolutions on Dr. Davis:

WHEREAS, an Ever-wise Providence has removed from our membership our beloved friend, Dr. F. F. Davis, who for over forty years has been one of the leading physicians of this section, and whose profound knowledge of medicine and love of his profession, and whose high character commanded the respect and admiration of all who knew him:

THEREFORE, BE IT RESOLVED: *First*, That we, the members of the Mid-Tidewater Medical Society deeply deplore the death of our friend and associate;

Second, That in his death the citizens of the County of Gloucester and the members of this Society have sustained a great loss. Dr. Davis was born in West Point, Va., on June 4, 1871, where he spent his early boyhood. He was educated at Randolph-Macon College, graduating in 1890, and the Medical College of Virginia, from which he graduated in 1894. Shortly thereafter he settled in Gloucester County where he practiced the profession of medicine until his death. During the World War he was honored by being named District Medical Advisor for the Draft Board. He died in Richmond, Va., on July 18, 1937. He was a gentleman always deeply interested in the welfare of his county and State, and actively taking part in its activities. For many years he was President of the First National Bank Gloucester, Virginia.

Third, We tender our sincere sympathy to the family of our deceased associate and friend, in their bereavement.

Fourth, That a copy of this resolution be spread upon the minutes of this meeting, and a copy be sent to the family of Dr. Davis.

H. A. TABB, M. D.,
W. S. COX, M. D.
Committee.

BASIC OPERATIONS IN COMMERCIAL CANNING PROCEDURES

II. THE BLANCH

● Previously, we have described the reasons for the thorough cleansing of raw food materials prior to canning and the methods by which such cleaning is effected. Another basic operation in the commercial canning procedures for many vegetables and some fruits, is known as the "blanch". (1)

In essence, the blanch is an operation in which raw food material is immersed in warm or hot water, or exposed to live steam. The blanch serves a multiple purpose.

First, blanching serves to soften fibrous plant tissue. By so doing, it contracts or expands these tissues and thus insures a proper final fill in the tin container. Second, during the blanch, respiratory gases contained in the plant cells are liberated. This release of gas prevents strain on the can during heat-processing and favors development of a higher vacuum in the finished product.

Third, the blanching operation inhibits

enzymes naturally present in the raw foods and prevents further enzymatic action. Inhibition of enzymes—particularly those inducing oxidative reactions, yields products of superior quality and nutritive values. Fourth, the blanch may serve as an added cleansing measure and also remove "raw" flavors from certain foods. A final function of the blanching operation is to fix or set the natural color of specific products.

In commercial canning practice, blanching is usually accomplished in equipment especially designed for certain types of products. In general, the raw products after thorough washing are conveyed through water or steam by various mechanical devices capable of adjustment so as to subject the raw materials to a particular temperature for the proper period of time.

Such, in broad detail, are the purposes and mechanics of the blanch, a basic operation in many commercial canning procedures.

AMERICAN CAN COMPANY

230 Park Avenue, New York, N. Y.

(1) 1937 Appertizing or The Art of Canning,
A. W. Bitting,
The Trade Pressroom, San Francisco.

This is the thirty-fourth in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.



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VIRGINIA MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

69th Annual Meeting, Medical Society of Virginia, Danville, October 4-6, 1938

Vol. 65, No. 5
WHOLE No. 1031

RICHMOND, VA., MAY, 1938

\$2.00 A YEAR
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Entered as Second Class Matter at the Postoffice, Richmond, Va.

Nutritional Anemia in Infants

THE iron stored in the infant's liver at birth is rapidly depleted during the first months of life (Mackay,¹ Elvehjem²). During this period the infant's diet contains very little iron—1.44 mg. per day from the average bottle formulae of 20 ounces, or possibly 1.7 mg. per day from 28 ounces of breast milk (Holt³). For these reasons, and also because of the low hemoglobin values so frequent among pregnant and nursing mothers (Coons,⁴ Galloway⁵), the pediatric trend is constantly toward the addition of iron-containing foods at an earlier age, as early as the third or fourth month (Blatt,⁶ Glazier,⁷ Lynch⁸).

Pablum is an ideal food for this purpose, as it is high both in total iron (30 mg. per 100 gm.) and soluble iron (7.8 mg. per 100 gm.) and can be fed in significant amounts without digestive upsets as early as the third month, before the initial store of iron in the liver is depleted. Pablum also forms an iron-valuable addition to the diet of pregnant and nursing mothers.

Pablum (Mead's Cereal thoroughly cooked and dried) consists of wheat-meal (farina), oatmeal, cornmeal, wheat embryo, brewers' yeast, alfalfa leaf, beef bone, reduced iron and sodium chloride.

¹⁻⁸ Bibliography on request.

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SQUIBB Pollen Extracts

Virginia Medical Monthly

Official Publication of the Medical Society of Virginia

Vol. 65, No. 5
WHOLE No. 1031

RICHMOND, VA., MAY, 1938

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ACUTE SINUSITIS IN CHILDREN.*

G. S. FITZ-HUGH, M. D.,

Department of Otolaryngology, University of Virginia,
Charlottesville, Va.

In the presentation of this paper we wish first to state that we have nothing new to add to the accepted methods of diagnosis and treatment of this condition, but were prompted by the apparent lack of significance attached to acute sinus infections, which are probably just as common in children as in adults. Included is a resumé of our methods of diagnosis and treatment.

Anatomy: A few words in regard to the anatomy of the nasal accessory sinuses are necessary. According to Schaeffer,¹ the maxillary sinus is present as a definite cavity at birth and hence thereafter is susceptible to disease. The sphenoid sinus by the third year may cause trouble. The ethmoid labyrinth is well developed at birth and progresses rapidly in development during the first year of life into the anterior and posterior divisions. The frontal sinus may not be determined as such until the end of the first year and, as an average, is not susceptible to disease until the seventh year. Embryologically, the frontal is an offshoot of the ethmoids, and where one is infected in the very young, the other will be also and will be treated as such. In the development of the sinuses, there is a great chance for the drainage passages of individuals or groups to be so arranged that they may be obstructed by pathological or other changes.

Separating the nasal cavity from the orbital cavity, there is a thin plate of bone subject to congenital dehiscences.

The cranial bone in the young is diploic in nature and is in intimate relationship with the diploic veins; hence, infection may spread rapidly through the skull.

Greenfield² brings out the fact that positive pressure outside the orbit, as in the nasal cavity, can

with ease cause an increase in the tension within the orbital cavity because of the relationship of the soft tissues, muscles, vessels, and globe. The easy compressibility of the vein walls will result in early stasis and edema.

Pathology: Pathology is merely the question of bacterial invasion, infection, and stasis with pressure.

Etiology: Since we are dealing primarily with an acute condition, such factors so well brought out by Skillern,³ Dean,⁴ Nippe,⁵ and others as the presence or absence of diseased tonsils and adenoids, vitamin deficiency, malnutrition, etc., need be given little space. We are impressed by the fact that in our group of cases only one followed a childhood infectious disease (measles). Crooks⁶ emphasizes the fact that some degree of sinusitis occurs with every cold, the vast majority clearing up of their own accord. In nearly every acute case we have on record, a history of a preceding rhinitis was obtainable. Anatomical obstruction to the drainage of sinuses, such as a deformed septum or large adenoid, is obviously a factor in the development of the acute stage. An acute allergic rhinitis must not be overlooked. Forceful blowing of the nose, as urged by most parents, does much to drive infection into the sinus cavities.

Bacteriologically our cultures have yielded staphylococci, streptococci, micrococcus catarrhalis, and occasional pneumococci. The streptococci seem to be responsible for the more fulminating cases with the staphylococci as secondary invaders. Woodward⁷ believes that when staphylococci are predominant osteomyelitis is a likely complication. Faulkner,⁸ after Babcock, states that the pneumococci and staphylococci are the predominant organisms in the acute sinus infections in childhood. There is no specific organism as the causative agent in sinusitis.

*Read before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, Va., October 12-14, 1937.

Diagnosis: In diagnosing acute sinusitis in children, there is the usual history of an upper respiratory infection and cough with the nasal discharge of a "bad cold" and associated general malaise. However, the child may have an acute sinusitis without a very evident discharge. Any child complaining of pain in the head should certainly receive careful examination, for headache is not a common complaint in children. In infants, restlessness and irritability may be the equivalent to pain in the older children. The temperature may be quite variable. In the cases we have seen, a most frequent presenting complaint is edema and reddening of the eyelids. While a rhinitis with nasal discharge is considered a normal episode by many parents, anything referable to the eye will bring them in for consultation sooner or later. There is usually swelling of the nasal half of the upper lid at the beginning, and at the other extreme chemosis, proptosis, and fixation of the globe, indicating orbital abscess. Tenderness may be present. Examination of the nose intranasally discloses edematous membranes with thick pus exuding from the upper nasal cavity. Transillumination is of some value, but X-ray examination is indispensable and should be obtained as soon as possible, both as an aid in diagnosis and also for comparison in case of complication. The importance of X-rays is emphasized in practically every writing on this subject. Usually there will be a cloudiness of the ethmoids and maxillaries, and the frontal if present.

We have been impressed with the lack of cervical adenitis and the apparent good appearance of a child in the face of a serious condition.

In the differential diagnosis such conditions as trauma, abscessed teeth, infections of the eyelids, face, and cavernous sinus thrombosis have to be considered. As pointed out by Babbit,⁹ the last mentioned will cause considerable difficulty at times. Porter,¹⁰ in his review of the cases from a Boston hospital, states that 75 per cent of the orbital abscesses were due to sinusitis and 82 per cent of these were in children.

Treatment: Treatment is both medical and surgical with conservatism as a keynote in the latter. The general practitioner, pediatrician, allergist, and otolaryngologist, depending upon the circumstances, must work in cooperation. The pediatrician takes care of the feeding problem and general condition of the patient; the allergist aids us in

the cases secondary to this condition. Remembering that a moderate to severe rhinitis in a child means a sinusitis, usually ethmoid and maxillary, then the problem is to "keep the cold open", so to speak, while supporting the patient generally with proper environment, rest in bed, warmth, diet, elimination, fluids, and vitamin administration. To prevent stagnation in the sinuses, we use an ephedrin sulphate solution (1 to 3 per cent) in a bland oil. In the younger children this is used as nasal drops and in the older as a spray. When drops are administered, the turned back position of the head should be insisted upon, if their maximum effectiveness is to be obtained, using only a few drops at each application and repeating after several minutes if necessary. When a spray is used, the nose should be sprayed at intervals of a few minutes until proper aeration is obtained. There is no harm in an aqueous solution of ephedrin, but this does have irritative tendencies at times. Remember the secretion in a rhinitis is already acid in character and excoriations of the skin and mucous membranes are common. Following shrinkage of the membranes, a few drops of 5 per cent to 10 per cent argyrol solution may be instilled. Warning is given against the indiscriminate use of nasal medications. An allergic rhinitis should be watched for. Dean¹¹ states, "One must not forget that acute allergic rhinitis is a common cause of acute purulent sinusitis and its common sequelae, chronic purulent sinusitis."

If, from the symptoms and signs, we believe that the patient has more than "just a cold", then hospitalization is indicated, if possible. The same type of treatment as mentioned above is carried out and in addition more energetic methods are employed to keep the nose clean and the ostia of the sinuses open. The patient is put on ephedrin shrinkage; and at least once daily, more often if necessary, shrinkage and cleansing the nose is carried out under direct vision. Cleansing is effected by use of a cotton applicator and a blunt tipped suction apparatus. We have used dry suction (negative pressure) but are not generally in favor of it, believing as Kelly¹² does that often it does more harm than good, because of its difficulty in regulation of the pressure and the resulting damage to the intranasal membranes from too much negative pressure. We seldom use nasal irrigations and have had no experience with the Proetz displacement method of ther-

apy. In some cases the adenoid is removed in order to secure better drainage, as is done in ear infections.

Cold or hot compresses are used in case edema of the eyelids makes its appearance, and it is to be remembered, as Greenfield points out, that edema of the eyelids does not necessarily mean infection has actually spread to the orbit, but is based at first on stasis in the vascular system secondary to ethmoid stasis and is still amenable to conservative treatment.

Our choices in sedatives are aspirin and codein in appropriate dosage.

It may be mentioned here that, according to work by Lierle, Moore,¹³ and others in regard to ciliary



Orbital Abscess.

activity of the mucous membranes of animals, adrenalin 1:1000, thymol, and mercurochrome are contraindicated because of their depressant action. Other astringent medications commonly used such as ephedrin, menthol, and cocaine have no such harmful action.

If the case does not progress favorably, as reflected by the appearance of the nose, subsiding edema, drainage, temperature, and general appearance of the patient, then we believe surgical methods are indicated. Under surgical methods we include

adenoidectomy, intranasal antrostomies, infraction of the middle turbinate, and external operation. The object, of course, is to obtain adequate drainage with the least possible trauma to the intranasal structures. All otolaryngologists will advise against surgery in the acute stages; however, at times, even in this stage, some surgery must be done, such as the performance of an intranasal antrostomy with infraction of the middle turbinate, if this is needed. Often it is not difficult to wash an antrum, using a blunt curved cannula inserted into an accessory normal ostium in the middle meatus. These are sometimes quite large in children. Little trauma is involved in this procedure. If an antrostomy is done, a rubber catheter is inserted into the antrum for subsequent irrigation and drainage. As an anaesthesia, we use local or ether, depending upon the age and conduct of the child. According to our records, a middle turbinectomy has seldom been done and is not advocated.

If the case has progressed to the point that we are rather positive an orbital abscess has developed, as indicated by proptosis and fixation of the globe or definite induration of the tissues, then external operation is performed without delay. We prefer an external route. Davis¹⁴ and others, however, have drained their cases of orbital abscesses successfully by the intranasal approach. A curved incision is made, beginning below the eyebrow, curving downward and outward around the inner canthus of the eye. The periosteum is then elevated from the bone, exposing the lamina papyracea, and usually as you carry out this exposure an abscess cavity will be encountered with a gush of pus up into the wound. We do not stop here, as some surgeons advocate, but remove a part of the lamina, enough of the ethmoids, and if necessary a portion of the floor of the frontal sinus near its inner angle to enable us to place a rubber tube drain down into the nose leading from the infected area or site of the abscess. We do not usually find the point of leakage, but, when we have, it was commonly from the ethmoids. However, there has been one case when we demonstrated the perforation in the floor of the frontal, and another where we were reasonably sure the maxillary was responsible for the abscess. The original incision is closed with dermal sutures. The post-operative care is, as mentioned in medical treatment, special care in regard to the toilet of the nose and fluid intake. We

find that we obtain good drainage from around and within the tube in the nose. Crusting and irritation from the tube is cared for by frequently cleansing the nose and the use of a bland ointment. Usually at the same time we perform the external operation, an intranasal antrostomy is done.



Orbital Abscess.

Blood transfusions are a valuable adjunct in treatment in the septic cases. Staphylococcus toxoid is given in these cases where this organism is predominant. We have used sulfanilamide during the past six months but are not ready to evaluate its efficiency at the present time. Hodges¹⁵ recently reported good results in the treatment of certain well selected cases with X-ray therapy; we have not yet tried this method.

Complications: The complications are orbital abscess, septicemia, osteomyelitis, meningitis, brain abscess, and cavernous sinus thrombosis. The progress to chronic sinusitis may also be considered a

complication. In checking the records of about 300 cases of acute sinusitis of all ages, the larger number of complications, excepting orbital abscess, seem to occur in the age group of from twelve to twenty years.

CASE RECORDS

We have for presentation thirty cases of acute sinusitis in children in the age group from birth through twelve years of age. This group includes only those cases admitted to the hospital because of the severity of their condition and does not take into consideration a large group of cases treated conservatively in the out-patient department of the hospital and in the private offices of the staff members. As expected, the ethmoid and maxillary sinuses were those always found to be diseased with an occasional frontal and rare sphenoid involvement. The majority of the patients were brought first for consultation because of edema of the eyelids (see Table I). There were two deaths in the

CASES—TABLE I.

| No. Cases | Age | Chief Complaint | |
|-----------|------------------|-----------------|----|
| 30 | Youngest 1 yr. | Edema Eyelids | 20 |
| | Oldest 12 yrs. | Headache | 6 |
| | Average 6.5 yrs. | Nasal Discharge | 2 |
| | | Otitis Media | 1 |
| | | Asthma | 1 |

group, each from brain abscess and meningitis. Six cases responded to conservative treatment without any operative procedure whatsoever. In the table II, minor surgery indicates irrigation of the maxillary sinuses, infraction of middle turbinate, antrostomies, and simple incision of an abscess. Major surgery means a definite entrance into the ethmoid labyrinth, usually by the external route, in order to obtain adequate drainage. Five of the thirty cases had an associated acute purulent otitis media.

Prognosis: The immediate prognosis is good. Carmack¹⁶ emphasizes care of these patients from several weeks to several years, stating, "The cure is often more apparent than real, especially in warm

CASES—TABLE II.

| No. Cases | Treatment | | Complications* | Deaths |
|-----------|-----------|---------------|-------------------|--------|
| 30 | Medical 6 | Surgical 24 | Orbital Abscess 9 | 2 |
| | | Minor 15 | Brain Abscess } | |
| | | Major 9: | Meningitis } | |
| | | { Intransal 3 | | |
| | | { External 6 | | |

*Complications present on admission to hospital.

seasons. Drainage and aeration of the sinuses must be maintained long after symptoms have subsided." Richards,¹⁷ in a study of a large group of cases of acute and chronic sinusitis in children at the Children's Hospital in Boston, concluded that apparently in his group medical therapy was more successful in obtaining cures in the chronic cases and surgery in the acute cases. Generally it is our belief that the prognosis is better in regard to the development of chronic sinusitis after an acute attack the younger the child.

COMMENT

In conclusion, we urge that a rhinitis or coryza in children be considered as a potential acute sinusitis and that local treatment, discriminately used, be instituted toward relieving nasal congestion.

Surgery, otherwise than that of the minor type, should be delayed and then practiced as the last resort.

It is important that patients, after suffering an attack of acute sinusitis, receive proper observation and follow-up care.

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NOTE.—Discussion follows next paper by Dr. Edmunds.

ARE WE TOO SINUS CONSCIOUS?*

MEADE EDMUNDS, M. D.,
Petersburg, Virginia.

For a number of years I have had the ever-increasing conviction that the public and, to a lesser extent, the medical profession are entirely too sinus conscious. Because of this feeling, I do not wish to convey the idea that sinus infection is rare or infrequent. On the contrary, it is probably the most frequent condition to which we are heir; it might

properly be termed a universal infection because there are few, if any, of us who pass much beyond the stage of adolescence who have not had attacks of infection in one or more of the nasal accessory sinuses, which attacks leave certain structural changes in the mucous membranes that show on Roentgen ray plates years later, and it is often impossible to differentiate from plates alone whether such positive X-ray findings indicate an active con-

*Read before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, Va., October 12-14, 1937.

dition or nothing more or less than changes due to previous infection which has long since been eliminated.

The idea, however, which I do wish to convey by the term "too sinus conscious" is that sinus infection or "sinus trouble," as spoken of by the laity, is being over-stressed and over-emphasized and that it does not deserve the importance which it receives as being the cause of the many vague and indefinite pains about the head and face of which so many patients complain; and neither do I believe that it acts nearly so frequently as a focus of infection, causing the manifold symptoms in remote parts of the body for which it is given credit. Now, many of you, I am sure, will disagree with this, but I would like for you to recall the fact that there are fashions in diseases as in clothes, and that you, as well as I, have seen a certain type of patient who would not think of having a headache from anything but "sinus trouble" and who gets a great kick out of back yard and over the bridge table talk about it, finally ending with a statement something like this, "I have a sinus," and oftentimes Mrs. So and So who listens to these symptoms of sinuses and operations get the idea that she must have a sinus too. Remember the "bridge club clinicians" are patient sufferers from and keen diagnosticians of sinus disease. Now, you must have seen also another type of patient who is sinus conscious, is usually of an unstable nervous make-up, is poorly adjusted to his or her problems, is full of unnecessary anxiety and phobias, and is being worried sick over the fact that in the morning when he awakens his nose is a little stuffy, that he has some post-nasal discharge of a mucoid character which has to be gotten out of the nose and throat and which discharge may recur at times during the day. This patient comes in and says, "I must be swallowing this discharge and I am afraid it is poisoning my system. I think I have sinus trouble." On the other hand, you surely must have seen, as I have occasionally, another type of patient who has a definite chronic purulent sinusitis with one or both sides of his nose reeking with pus and who does not give two hoots about it. There certainly must be something else besides sinus infection that is playing a part in the symptom-complex of these types of patients, and here, as well as elsewhere, it is just as important to know what type of patient has the disease as to know the type of disease the patient has.

That sinus trouble is quite prevalent and seems to

be becoming more and more popular every day, I am sure you will agree; but since one of the aims of medicine is to reduce disease and promote the welfare and happiness of the people, the natural question arises, why is the public so sinus conscious, and if they are not made more unhappy because of it? By being so, they worry, they become unhappy, and they borrow trouble, and the patient with the mucoid post-nasal discharge, which may be entirely within normal bounds and means nothing, is certain that it is poisoning his system; it becomes a perfect bugaboo to him, and he develops a fear complex. No doubt high pressure advertising over radio, newspapers, and bill boards of the various patent medicines for colds, etc., have contributed to this state of affairs, but that is not the only factor. I believe that it is due in no small measure to the medical profession itself. Dr. Harold Hays, writing in the *New York State Journal of Medicine* on "The Conservative Treatment of the Nasal Sinuses," has this to say: "Perhaps more harm has been done by doctors and people knowing about sinuses than if they knew nothing about them at all. Patients have become so frightened by the word 'sinus' that they immediately diminish their own resistance by worrying until in some cases they actually develop a serious condition. I believe that the majority of suspected sinus conditions should not be operated upon and will recover if treated conservatively." We speak too loosely of sinus trouble to our patients and are inclined to be too pathological minded with them. Instead of telling them they have an acute nose cold or rhinitis, we diagnose their ailment as an acute rhino-sinusitis and tell them that they have sinus trouble which, technically speaking, is no doubt true, but when we place the term sinus uppermost in their minds, we put these patients in the same category as those with functional heart disorders by making them focus their attention on something which is very likely to be well in a short time. We are also too prone to blame the sinuses as being the seat of dangerous foci of infection that cause remote troubles in almost every part of the body, and it is probably this attitude which accounts for the marked rise in popularity of sinus troubles. The question now arises, is this attitude justified and do or do not infections in the sinuses cause systemic effects in remote parts of the body as frequently as they are given credit for?

In as much as sinus infection is not necessarily a nasal problem, but one in which every branch of

medicine has traced systemic disorders to and from, it is proper to consider the subject from this angle. How frequently a definitely infected sinus is a potential or an actual focus of systemic infection, I am not able to say, and regarding this point men of prominence and whose opinion we must respect are in marked disagreement, and it is puzzling and confusing to read of the marked differences of opinion that exist as to the status of the sinuses as foci of infection.

It will not be amiss to cite the opinions for and against. Dr. Willis Manges has recently said, "Nasal accessory sinus disease is one of the most important clinical subjects we have to consider today, and it is more frequently over-looked and more inadequately treated than almost any other disease of real consequence." Cullom also warns that the sinus is "the real factor in focal infection," while we have the report of Anderson who, from a study of four hundred consecutive cases of antral sinusitis, has found that it is not a significant factor in focal infection. Barnhill, in a recent consideration of focal infection, states that "a very great many operations have been performed with the view of eradicating foci in an effort to cure secondary disease, but the operative results have not been as worth while as had been hoped."

Clerf, in a study of two hundred cases of bronchiectasis, found concurrent infection of the sinuses in 82.4 per cent and believes that sinusitis is frequently responsible for bronchiectasis, particularly when it is bilateral, and thinks that the infection is carried by aspiration or by way of the lymphatics. On the other hand, Davis is of the opinion that the relationship between sinus disease and bronchiectasis is obscure and that the sinus condition is probably not primary.

The literature abounds with opposing views such as have been quoted, and to continue along this line further would be useless. It is pretty-well established that there are two groups with divergent opinions—one group who holds that the accessory sinuses are very rarely the source of focal infection and believes that no treatment or no surgical operation should be done unless the sinus itself is in need of attention. On the other hand, there are many who strongly recommend the sacrifice of any hypertrophied sinus mucosa when there is any reason to suspect that even this doubtful or silent sinus is responsible for symptoms elsewhere.

Is there any wonder, then, that the public is sinus minded and in a quandary as to what to do? No doubt there are extremists or left and right wingers in each of these groups, and it seems to me that there is a middle position which we may take. I believe that there are times when absorption does take place from infected sinuses and that systemic and remote consequences are the result thereof, but I do not believe that it occurs nearly so frequently as some would have us believe, and I am of the opinion that the remote effects of sinus infection are over-emphasized and over-stressed; therefore, I would most emphatically cast my vote with the more conservative group, for I believe in the due course of time it will be conceded that they will have much the better of the argument.

My reasons for reaching this conclusion are not based upon research work in a laboratory or even an association with a large clinic, but sixteen years of observing and studying patients and using a certain amount of ordinary common horse sense have led me to this belief and there seems much to support it. For instance, take a patient with an acute fulminating suppuration of the maxillary antrum with marked obstruction to drainage, severe pain, and perhaps tenderness over the affected part. Here we have a large cavity filled with pus under pressure giving rise to all the local symptoms which such a condition would produce in other parts of the body. But the general reaction is quite different. Does this patient have any appreciable rise of temperature? He certainly does not; neither does he have the general prostration, the marked leukocytosis, nor the swollen lymphatic glands that so often accompany infections in the throat or elsewhere in the body. Why is this clinical picture so different? It is probably because the para-nasal sinuses are bony cavities supplied with natural avenues of drainage and facilities for evacuating secretions. The mucous membrane which lines them is thin and contains few blood vessels and glands and has poor powers of absorption. This has been shown by Childrey and Essex in experiments on the frontal sinuses of dogs. The natural openings of the sinuses were blocked so that they became closed cavities, and injections of such drugs as nicotine, rattle snake venom, and histamine were made through the wall and absorption was found to be poor in all cases. The primary object of this work was to estimate the danger of injecting highly toxic drugs in the treat-

ment of sinus disease, but it was felt that the results indicated that toxins from contained purulent material are likewise absorbed in very minute quantities; therefore, if the absorption is so slow from cavities which have been mechanically closed, it should follow that absorption from draining cavities would be much less likely to occur, and this fact probably accounts for the lack of high temperature, general prostration, comparatively low white count and the other manifestations which usually accompany local infections outside of bony cavities.

This sinus complex is made more complex by the profession in the diagnosis of sinus infection, especially in the border-line or suspected cases in which the diagnosis is not made on clinical findings, but made chiefly on X-ray examination. Were we to take a series of two hundred persons, normal and abnormal, it is quite likely that there would be wide discrepancies among equally competent examiners as regards the presence of sinusitis unless the clinical findings were definite and clear-cut. A cloudy sinus on X-ray may mean under development, a thickened mucous membrane without clinical manifestations due to an old healed infection, to an allergic edema, to tumor or to pus. After all, the key to the situation here, as well as in the majority of diagnostic problems, is the clinical findings, a good history, and some common sense. Unless the relationship between cause and effect seems highly probable, we will make many wrong diagnoses by attributing the patient's symptoms to any and every abnormal finding that is discovered.

We may make a diagnosis of sinusitis on X-ray findings alone, and the patient may have sinus infection, I could not prove otherwise, but unless the clinical findings and history support this diagnosis, this cloudy sinus may be having no more to do with the patient's symptoms than his bow-legs or knock-knees, whichever he might happen to have. The important thing is to correctly evaluate all findings and place them in the proper category in relation to the symptoms. That is where I am afraid we, as rhinologists and physicians in general, often fail if we do not take into consideration the temperament, the make-up, the problems, and the adjustments which our patients are making. Many patients would not be coming to our offices today if they had made the proper adjustments to their problems and were happy and contented. You know that as well as I do.

I thoroughly agree with the late Dr. Dunbar Roy,

of Atlanta, writing in the *Southern Medical Journal* on "The Rational Treatment of Nasal Disease," when he says, "It may seem odd for this statement to come from one who limits his practice to these diseases, but I honestly think that many a patient is today suffering from too much treatment. There is such a thing as over-doing matters, and the habit these days of persons having their noses and throats treated year in and year out is producing troubles which before did not exist." Continuing the quotation he says, "Not long ago a patient came to me from a distant city in Florida and, like all those who have the treatment habit, she was able to tell me exactly her nose and throat troubles before an examination was made. She had only a few days to stay in the city, but she wanted treatment. From her I ascertained that for the last three years she had been under constant treatment for her nose and throat. She was treated in New York City for three weeks by a certain well-known specialist. On her way home she had to stop in Baltimore because she felt the need of treatment. If she had not been on a through sleeper to her home, I imagine that she would have been treated at intervals on the way. She reached home, and the specialist there continued to treat her three times a week. When I examined carefully the nose and throat condition in this lady, there was found only the dry, irritative state of the mucous membrane incident to too much local treatment. 'Madam,' said I, 'do you wish me to tell you honestly the severity of your trouble? Then if you wish such a statement from me, I would say that you are suffering from too much local treatment.'"

This case may or may not be slightly exaggerated, but anyway it is more or less descriptive of types of patients who come into my office and recite the same kind of story. There is no doubt about it; they certainly have the treatment habit. In the words of a jecter writing on this subject, "One wonders where all this modern sinus trouble comes from and what it really may be. Some say its prevalence is an aftermath of the World War, some say it is the doctors new fad, and some satirically declare that with the high cost of living there are not enough appendix operations to keep all the doctors prosperous." So, in conclusion and in all seriousness, I could not better summarize the sinus problem and the ideas which I wish to convey in this discussion than to quote conclusions of Krimsky who says:

"1. Sinus trouble has become a very elastic term that is being loosely employed by both doctor and the layman to include not only sinusitis, but also all types and degrees of nasal infection; it has also served as a cloak to explain away obscure headaches, eye complaints, and all forms of general disorders.

"2. Sinus trouble should better be reserved for those cases presenting sufficient local pathology to require surgical attention; otherwise, it is bound to sooner or later fall into disrepute.

"3. The role of the sinus as a focus of infection has been much over-done, and the evidence in favor of the sinus as an active focus is insufficient to warrant such undue stress.

"4. Surgery as a rule is not a cure for sinus trouble and not infrequently is but a prelude to further surgery. Preliminary medical investigation is therefore wiser before than after."

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DISCUSSION OF PAPERS BY DRs. FITZ-HUGH AND EDMUNDS

DR. C. W. PURCELL, Danville: Acute sinusitis occurs in children far more frequently than is generally recognized. There is surely a degree of sinusitis with every attack of coryza. Haiké opened the sinuses of sixty-two children at post-mortem and found fifty-two of them diseased. Others have routinely made X-ray studies of the sinuses of the children admitted to hospitals for tonsillectomy and adenoidectomy and found that approximately 80 per cent showed X-ray evidence of pathological sinuses. Sinusitis is rarely suspected in children, largely because there is a prevalent opinion that the sinuses in children are so under-developed.

Ashely believes that the predisposing causes of sinusitis are:

1. Physiological effects, such as unbalanced diet, poor ventilation and poor living conditions.
2. Mal-formations.
3. Allergy.
4. Infection.

Children who have sinusitis become anemic, irritable and undernourished. This leads to acute exacerbations with the dreaded complications mentioned by Dr. Fitz-Hugh. Very frequently tonsils and adenoids are removed when, really, the cause of the rhinitis is a sinusitis. Every child with the common complaint of frequent colds should have a careful history for any allergic state and a careful examination of the nose, throat and sinuses. In examining the sinuses, a search should be made around the middle turbinate for the presence of pus. Transillumination and X-rays should be done if indicated. If allergy is at all likely, nasal secretions and blood smears should be studied for the presence of eosinophils. Studies by an allergist should be made if necessary.

Conservative treatment of the acute cases should be emphasized. The majority of these cases will clear up when drainage is established. In using nose drops, it is best to avoid oily preparations in young infants, because of the dangers of lipoid pulmonary disease. Silver preparations should not be used over long periods of time, as cases of argyria are fairly frequently reported. Recently, Hetler has studied the nutrition in relation to infection of the sinuses. She stressed the importance of adequate diet, vitamins, especially vitamins B and C, minerals, and general hygienic measures. She found that improvement in the condition of the nose and sinuses follows the institution of these measures in practically every case.

I wish to thank Dr. Fitz-Hugh for bringing this subject to our attention.

DR. THOS. E. HUGHES, Richmond: Dr. Edmunds' paper has been read with much interest. He has made some observations on the subject of sinusitis that deserve our careful consideration.

Are we too sinus conscious? Undoubtedly, there is the unstable individual who has vague pains about his head and face, as well as in other parts of the body. Whether the pains are real or imaginary, granted that pains are possible without pathology, they are quite definite to the patient. I believe that the paranasal sinuses in such a patient should be carefully studied in a search to determine the cause of the pain. If the examination is thorough and no sinusitis is discovered, the physician's report should be sufficiently convincing to relieve the "sinus consciousness" of the average patient.

Occasionally, we meet a person who claims never to have colds; but it is usual for most persons to have one or two colds a year, and if the sinuses are not involved the cold subsides in a week or two. However, during each cold, the sinuses may be infected. In fact, I think it is remarkable that the sinuses so often escape contamination when we consider their proximity to the nares with which they directly communicate. Their anatomical relationship plus the forcible blowing of the nose filled with pus certainly makes the sinuses very liable to infection. Perhaps, if we properly consider our sinuses during and following each cold, we could be less "sinus conscious" the rest of the time.

Undoubtedly, there is at least one type of person who is too "sinus conscious." I alluding to one whose medicine

cabinet is always loaded with nasal drops and sprays, and particularly with strong astringents. If such a person does not have sinusitis when he begins the use of these preparations, he will surely prepare a fertile field for it.

Some mucus in the nose, nasopharynx and pharynx, where mucous glands are present, is normal; however, I am always suspicious of sinus infection whenever there is sufficient post-nasal discharge of a mucoid character to annoy a person who is otherwise normal. Nevertheless, I agree with Dr. Edmunds that it is important to know the temperament of the patient whom one is treating, as some patients are greatly disturbed by comparatively minor ailments.

It is interesting to note the difference of opinion among members of the profession as to the effect of sinus infection on infections elsewhere in the body. As stated by Dr. Edmunds, an acute, purulent sinusitis seldom provokes a marked rise either in temperature or in the leucocyte count, and I believe that he has correctly explained the reason for the absence of the acute symptoms; nevertheless, many patients with acute sinus infection are definitely, acutely sick with headache, body aches, swollen cervical glands and toxemia. Furthermore, chronic sinus infection does, I believe, produce chronic bronchitis, neuritis and arthritis. The sufferer feels sluggish, mentally and physically, tires easily and lacks energy. These symptoms develop very gradually because the primary infection is in a bony cavity whose lining membrane contains few blood vessels and lymphatics. This anatomical condition makes the infection all the more insidious, and frequently some remote secondary infection gradually develops.

While it is unwise for the patient to be too introspective or conscious of any disease, it is important for the physician, when making a diagnosis, to bear in mind that sinusitis is a common disease. This may avoid exhaustive examinations or even a wrong diagnosis.

In his title Dr. Edmunds has asked a direct question, the answer to which is a matter of opinion. My opinion is that, although the lay public may be too sinus conscious, the average physician is not.

DR. W. AMBROSE MCGEE, Richmond: I enjoyed both the papers very much, but I shall limit my remarks to Dr. Edmunds' paper. I was glad to hear him say that the X-ray, which we formerly thought was definitely diagnostic of sinus infection, is not so. I am not speaking disparagingly of the X-ray. But the shadows which it shows are not necessarily infections. All of us have seen bilateral edema; all of us have seen angioneurotic edema. Normally, there may be a paper-thin sinus membrane. Later, during an acute attack, the membrane may thicken many times. At times we know it is difficult to say whether we have an infection or an allergic condition. A smear of mucus from the nose, made by blowing into cellophane and then smearing on the slide, is very helpful. If there are more than ten eosinophils to one neutrophil it is very suggestive of an allergic condition. Hansell has said that 80 per cent of all sinus is allergic. He is a noted nose-and-throat man.

There may be some other evidence of an allergic condi-

tion. There may be headache, fatigue, abdominal pain, nausea, repeated vomiting, croup, etc. Croup is not recognized as it should be, to be an allergic symptom. Or there may be asthma or hay-fever with seasonal distribution. I have a patient now who has been treated for eight years by a good nose-and-throat man for sinus infection. Yet his symptoms were seasonal—in the spring and fall every year. He developed an asthma, and the throat man recognized it then as an allergic condition.

An attempt to institute drainage by puncturing is similar to unstopping a dam by a small outlet.

Sinus infection is often due to the turbinate's swelling and blocking sinuses, and secondary infection develops later from stagnation of drainage.

As to X-ray treatment of the sinuses, the X-ray men may not agree with this, but in those not responding at all to other measures, X-ray treatment has been useful. I feel about X-ray for sinuses like X-ray for hives or eczema. It may give temporary relief, but those are local manifestations of some internal condition.

DR. WRIGHT CLARKSON, Petersburg: Dr. Edmunds is right in saying that the public is too sinus-conscious; particularly is this true now because of recent newspaper publicity. But the *medical profession* is not sufficiently sinus-conscious.

For many years I have routinely examined the sinuses of all patients referred to me for roentgen examinations of the chest and have found many lung conditions to be secondary to chronic sinusitis.

The roentgen method is the only accurate way to diagnose sinusitis. A thickened membrane in a sinus resulting from infection can easily be demonstrated roentgenographically and an acute suppurative sinus can usually be demonstrated by the accompanying periostitis. In fact, any foreign material or other abnormality in a nasal accessory sinus can usually be clearly demonstrated by a careful roentgen examination.

The first case of sinusitis that I treated by means of roentgen therapy was in the year 1924. At that time there was little in the literature about the use of X-rays for this purpose. I was rather surprised to find that the infection cleared up rapidly, and from that time up to the present I have continued to treat sinus infections, but always in close cooperation with a rhinologist, for roentgen therapy is not a specific for sinusitis.

I believe that pus under pressure in a sinus should be evacuated and that polyps and other obstructions that frequently accompany sinusitis should be removed before the treatment is begun.

I want to congratulate Dr. Edmunds on this paper, for it is timely and one of the best presentations that I have heard at this meeting.

DR. EDMUNDS, closing the discussion: I wish to thank the gentlemen for their discussion of my paper. I thought I should probably get more criticism of it than I have gotten. I think Dr. Hughes was particularly considerate in his remarks.

I hope you do not get the wrong impression of my idea of sinus infection. The preceding paper, of course, dealt

with definite sinus infections; nobody would doubt it; there is nothing questionable about it. But the cases to which I had particular reference were those cases who have vague pains here and there, and possibly someone has said they have sinus trouble. Well, it is a pretty good bet, anyway; probably nobody could disprove it. If the medical man could not find it, and the rhinologist could not find it, the X-ray might show a little thickening of the ethmoid capsule. There you have it. I think there are probably more of those than of patients who have definite sinus pathology. I think a real infection of the sinuses, that amounts to much, is not hard to diagnose. It is quite easy to diagnose.

I should like to cite one case I saw recently that bears out my impression that the public is too sinus-conscious. A man walked into my office and said he wanted to see

me about his sinuses. I could see he had been through pain. He had his hand up over his face. He said for two weeks he had been having pain. I noticed his eye was very red and asked him what was the matter with it. He said the sinus trouble had gotten into his eye. I put my hand over the other eye and asked him what he could see. He could see nothing. This man had a case of acute glaucoma and had lost the sight of one eye, yet he said nothing about that and laid all his trouble to sinusitis. I asked him what made him think he had sinus infection, and he said: "A few years ago I had some pain in my head, and they told me it was sinus trouble, so I thought I had it again." That illustrates what I mean by the public's being too sinus-conscious. This patient had made his own diagnosis.

THE CARE OF THE AGED.*

BLANTON P. SEWARD, A.B., M.D., F.A.C.P.,
Roanoke, Virginia.

What is old age to which all wish to attain and at which all grumble when attained.—CICERO, DE SENECTUTE.

Since the days when the Roman civilization flourished much has been written about old age. Cicero's essay, "De Senectute," written in 44 B. C., has long been regarded as a classic. With the Revival of Learning during the Renaissance, man became more inquisitive concerning the structure of his body and the nature of his pilgrimage on earth. Soon after Vesalius completed his exhaustive treatise, "De Humani Corporis Fabrica," Luigi Cornaro wrote his book, "Trattato de la Vita Sobria,"¹ which still is one of the best treatise on life and hygiene. Other men, both physicians and laymen, later recorded their observations on the various aspects of the different periods of life. As the years passed, more and more attention was devoted to old age. Leonardus Lessius' "Hygiasticon: or the Right Course of Preserving Life and Health unto Extreme Old Age,"² Francis Bacon's "Historia Naturalis et Experimentalis de Ventis,"³ and George Cheyne's "Essay on Health and Long Life,"⁴ though little known, must be given a high place in the literature on old age. Sir Hermann Weber,⁵ the noted British physician, and Sir Henry Thompson,⁶ the surgeon, both of whom lived more than four-score years, urged the necessity for moderation in all things in

order to prolong life. Elié Metchnikoff, the eminent Russian biologist, was perhaps the first person to devote serious study to the effects of extrinsic factors, particularly the diet, on longevity. In his books, "The Nature of Man"⁷ and "The Prolongation of Life,"⁸ he expounded upon broader lines than had hitherto been done, the philosophy of orthobiosis.

Geriatrics had its origin in 1724 with the publication of Sir John Floyer's treatise, "Medicina Geronomica: or the Galenic Art of Preserving Old Men's Healths."⁹ Since that time several note-worthy treatises have been published; as, for example, "Die Krankheiten des höheren Alters und ihre Heilung"¹⁰ by C. Canstatt, "A Practical Treatise on the Diseases and Infirmities of Advanced Life"¹¹ by D. Maclachlan, "Clinical Lectures on the Diseases of Old Age"¹² by J. M. Charcot, "The Diseases of Sedentary and Advanced Life"¹³ by J. M. Fothergill, "Old Age; Its Care and Treatment"¹⁴ by Robert Saundby, "Geriatrics: The Diseases of Old Age and Their Treatment"¹⁵ by I. L. Nascher, "Geriatrics: Treatise on Senile Conditions, Diseases of Advanced Life and Care of the Aged"¹⁶ by Malford W. Thewlis, and "Middle Age and Old Age"¹⁷ by Leonard Williams.

A characteristic of nearly all of these treatises is the discussion of ways and means of attaining old age, and of some of its physical aspects. Lillian

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*Read by title before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, Va., October 12-14, 1937.

J. Martin and Clare de Gruchy wrote in 1930 a book, "Salvaging Old Age",¹⁸ which differed from all preceding books in that the authors dealt almost entirely with the mental aspects of senescence. Raymond Pearl,¹⁹ with a biologic viewpoint and with many statistics, has written on the expectancy of life after sixty-five years of age; Aldred Scott Warthin²⁰ on the physiology and pathology of old age or the major involution, and Sir Humphry Rolleston²¹ has given a comprehensive review of the ancient and modern aspects of old age. A few years ago Alfred Worcester delivered an admirable lecture to a group of medical students on "The Care of the Aged",²² in which he tried to interest them in the personal care of the senescent. Three years ago a series of short articles containing many valuable suggestions on the medical care of the aged was published in the *British Journal of Physical Medicine* and later in a small volume.²³

While the literature on geriatrics is voluminous, the number of physicians who have devoted special attention to the care of the aged is small. Many possible reasons for this apparent lack of interest in senescence may be mentioned, among which is the fact that the discoveries and advances made in other fields of medicine attract more attention, and also the feeling that whatever is done for the senescent they will eventually succumb. We tend to shun the aged, to regard caring for them as a burden. We do not like to think that we too will grow old and perhaps helpless. We prefer clinging to the biologic conjectures and promises of science that the individual can be rejuvenated, the span of life greatly increased, and the unpleasant features of old age abrogated.

Although life expectancy at birth has increased since attention has been given to preventive medicine, the question may be raised whether a greater number of people are living to advanced ages. The great demands made upon us by present-day civilization, causing life to be more and more complicated and the environment often inharmonious, would seem to bear out the statement made in 1903 by Metchnikoff⁷ that there is little if any chance of a really physiological old age and death for mankind. The same author seemed somewhat more optimistic four years later when he expressed the opinion that although man's "disharmonies" are many, there are, nevertheless, certain elements in human nature which give promise of a happier life, and that man

can to some extent at least transform his "disharmonies" into "harmonies."⁸ His ideal of orthobiosis was the development of human life so that it passes through a long period of old age in active and vigorous health rather than simply a prolongation of life. He thought that through the process of education in the structure, functions, and limitations of the human organism, future generations will be in a position to adopt the principles of orthiobiosis, old age will be postponed, a greater number of people between sixty and seventy years of age will retain their vigor, and there will be fewer dependents in this age period than at present. It remains to be seen whether the prevention of diseases and the correction of environmental factors that cause degeneration of the vital organs and structures of the body will bring about this ideal in a civilization which is becoming more and more complex. At present, however, we are far from it; in fact, the recent investigations by Pearl¹⁹ and by Warthin²⁰ show that life expectancy after the age of seventy has actually declined. This does not seem to indicate that modern science has extended the Psalmist's span of life of seventy years. Saundby's¹⁴ prediction that only those persons who at the age of sixty possess bodies free from disease can expect to live to an advanced age, excepting, of course, injuries and acute infections, may be accepted as fairly accurate.

While aging is a natural and inevitable process, yet the very frequent occurrence of disease in elderly people causes one to wonder sometimes whether physiological old age is anything more than a relative term. Anatomical changes that are inevitable with age cannot be regarded as pathological, although it is difficult and often impossible to determine accurately where physiological involution ends and pathological changes begin. Physiological old age, according to Warthin,²⁰ is a process of involution and atrophy uncomplicated by superimposed pathological changes. Senile involution, according to Rolleston,²¹ may be brought about by one or a combination of several factors—biologically to changes in the tissue cells, chemically to toxins of bacterial or metabolic origin, physically to colloidal changes, to endocrine disturbances, and psychologically to hetero- or auto-suggestion. The exceptional occurrence of physiological involution without some evidence of superimposed pathological change is shown by the experience of Warthin,²⁰ who in thirty-eight

years did not see more than twenty-five necropsies of uncomplicated senile death. These deaths were due to myocardial atrophy and inadequacy—the natural termination.

True natural death must be very rare in the human race. In an interesting description of the course of natural death, Demange²⁴ stated: "Arrived at extreme old age, and still preserving the last flickers of an expiring intelligence, the old man feels weakness gaining on him from day to day. His limbs refuse to obey his will, the skin becomes more insensitive, dry, and cold; the extremities lose their warmth; the face is thin; the eyes hollow and the sight weak; speech dies out on his lips which remain open; life quits the old man from the circumference towards the centre; breathing grows laboured, and at last the heart stops beating. The old man passes away quietly, seeming to fall asleep for the last time."

The onset of senescence varies in individuals and in families depending upon various causal factors. We often see individuals with premature degenerative changes resembling those of senescence; whether they are due to abiotrophy by which Gowers²⁵ and Raymond²⁶ attempted to explain a number of diseases of the central nervous system, or to the lack of vital endurance, or to the effects of disease is an interesting question, although it is beyond the scope of this paper. The anatomical and physiological age is always more important than the chronological age. Some people obviously are old at sixty, while others are vigorous both mentally and physically at seventy-five. Since the nervous and cardio-vascular systems are largely the dominating factors within the body that determine longevity it is safe to say that senile changes in either one or both of these systems determine old age. The majority of elderly people die from some defect in the circulatory system; according to Pearl¹⁹ this is true in men above fifty-five years of age, and in women above sixty. Thompson and Todd²⁷ found that among 169 deaths of pensioners with an average of 77.2 years, death came by way of the circulation in 36 per cent; through lesions of the respiratory system, pneumonia and broncho-pneumonia, in 24 per cent, and through malignant disease in 13 per cent. The nervous and circulatory systems are intimately correlated with each other, and disease in one, particularly in the cardio-vascular system, exerts a harmful influence over the other.

In healthy people the onset of senescence may be so gradual that it is seldom suspected until the individual notices the changed appearance of his contemporaries, or by a slow recovery from an illness, or by the advent of some disability as hypertrophy of the prostate, or dyspnea on exertion, or by catching a reflection of drooping shoulders in the mirror. Those who have looked philosophically upon old age are not perturbed by the earliest functional manifestations of its approach, as presbyopia, waning sexual activity, and fatigue. As the years advance there is a progressive diminution in functional activity corresponding to the characteristic structural atrophy of organs and tissues. The response to stimuli of all kinds is diminished in contrast with the ready and often exaggerated response in early life. The popular opinion that old age is second childhood may be correct to the extent that frequently there is a superficial resemblance between the undeveloped mental powers of childhood and the failing mental powers in senescence. On the other hand, there is a great difference between the ever active child and the impassive grandparent.

There are no diseases peculiar to old age, and none from which it is exempt. From this standpoint, however, senescence has its compensations; for example, the metabolic disorders as diabetes mellitus, hyper- and hypo-thyroidism rarely appear for the first time in the aged, and when they do appear they are comparatively mild. Many of the acute infections rarely occur during this period of life, probably because immunity has been acquired in the course of the years. Erysipelas, influenza, and pneumonia are notable exceptions in that they are prone to occur during senescence. The clinical manifestations of diseases occurring in senescence often differ from those observed in the same diseases earlier in life. One factor accounting for this difference is diminished sensibility to pain. Thus coronary thrombosis, which occurs less frequently after seventy years of age, and the passage of either biliary or urinary calculi may not be accompanied by the agonizing pains associated with these episodes in younger people. It is not our purpose to attempt a discussion of the diseases that occur in the senescent; we wish merely to call attention to the fact that much can be done to make the evening of life more tolerable. Prostatectomy, the surgical removal of the sex organs which are prone to undergo malignant changes, and the improvement in methods

of treating fractures of the hip may be cited as notable advances in relieving and preventing suffering in the aged. Obviously, however, surgical procedures cannot be employed for the relief of the majority of their complaints.

The care of the aged in one way or another devolves upon practitioners in nearly every department of medicine, and not infrequently upon physicians in more than one department simultaneously. In a great many instances their care depends more largely upon the art than the science of medicine, since methods of treatment suitable for younger people become progressively unsuitable for the senescent, and since also, they, as a rule, have more fixed ideas and habits. Their comfort and not their impossible rejuvenation should be the physician's aim. Sympathetic and symptomatic treatment with as few drugs as possible rather than much treatment and change of habits generally give much better results. Three centuries ago Sir William Temple wrote: "In all diseases of body or mind, it is happy to have an able physician for a friend, or a discreet friend for a physician; which is so great a blessing that the wise man will have it proceed only from God, where He says, 'A faithful friend is the medicine of life, and he that fears the Lord shall find him.'"²²

The physician needs an inexhaustible stock of patience in caring for elderly people. Many of them are garrulous; their complaints seem grievous to themselves although they may in reality be trivial. Their confidence, however, is childlike and they are quick to recognize true friendship. Not infrequently their craving for friendship and sympathy causes them to magnify their complaints. One of the physician's greatest opportunities for helping them is in detracting their attention from their woes, in infusing a new zest for living, and in inducing composure of mind. The zest for living and composure of mind are essential for a happy old age. Many examples of the will to live may be cited. We have under care an attractive woman, eighty-two years of age, who has survived a severe illness one year ago. For several days during the worse stages we had little hope for her recovery. Although apparently a little more exhausted each day, she revived during the night, and on the following morning she would ask: "Doctor, don't you think I am better today?" Scarcely before her question could be answered, she invariably added this statement: "I

must get well, I have much to live for." Her desire to live, engendered by a naturally optimistic attitude, and the pleasure she derives from associating with her friends, was a strong factor in her favor during this illness as it was in aiding her recovery three years previously from a fractured hip. While she still is unable to withstand much exertion, yet she goes riding, her mind is clear, and she enjoys the daily visits of friends. Their welfare as well as the welfare of the members of her family is her chief interest.

The lack of this *joie de vivre* in the aged engenders carelessness, neglect of personal appearance and a loss of power to react to environment. Becoming discouraged and despondent, they acquire the feeling that they are old and no longer useful. Thompson and Todd²⁷ were convinced, from their experience with 500 pensioners at the Royal Hospital in Chelsea, that the powerful factor of lowered mentality, due to loss of self-confidence, self-respect, and the instinct of self-preservation, was the chief factor in inducing premature senility. They succeeded in counteracting this lowered mentality by antidotal suggestion and by avoiding expressions of condolence. Any assistance which the physician may render in helping his patient to regain self-confidence may prevent a state of invalidism from developing. There is no better tonic for such patients than the encouragement of personal vanity. The physician who notices his aged patient paying more attention to her dress, if in no other respect than in wearing a pretty ribbon or a bit of lace, makes a large contribution to her happiness in helping her to banish discouragement and despondency. It seems scarcely necessary to say that success along this line requires unremitting personal care, and that it should not be relegated to the nurse.

A happy disposition enables one naturally to smile instead of frowning upon strangers, upon the succeeding generation, upon new ideas; it keeps the mind free from anger, hatred and jealousy which Francis Bacon³ said "are the worst of all passions"; it tends to prolong life, and it is a healthy prelude to crossing the bar. Every one will readily agree with Sir James Crichton-Browne²⁸ that "the best antidote against senile decay is an active interest in human affairs, and those keep young who love most." The encouragement of such an attitude will prevent many elderly individuals from becoming introspective. The desire of many elderly people to

avoid as far as possible the society of the aged for the companionship of their juniors exerts, through suggestion, a wholesome influence, for, as Oliver Wendell Holmes said: "While we're youth in our hearts, we can never grow old."

The *joie de vivre* may be enhanced by the cultivation within reasonable bounds of some interests along with the main work of life. A hobby affords diversion, recreation and pleasure so necessary for the mental and physical welfare of every person. Those who have developed a hobby will find, upon reaching old age with its prospects of retirement, that they still have something interesting to occupy their minds. If more than one hobby has been cultivated so much the better, for diversity of interests keeps the mind young; the change from one interest to another rests, freshens and revivifies the mental processes. While creative mechanical work of some kind offers one of the best outlets for the old man's restlessness, yet, of all the interests he may have, that of gardening, planting and growing plants perhaps is the best form of exercise suitable to the needs of the individual. Since the mental powers usually are well retained in senescence, the person who approaches this period with the capacity for intellectual and cultural pleasures as music, art, science, reading, and writing fully developed will be happier. The individual who for any reason retires from his main work will be spared "a kind of mental imprisonment," so well described by Samuel Johnson, or a perpetual "holiday of horror" with its disastrous results both to mind and body. Elderly people, like the young, should heed the advice quaintly expressed by Sir Thomas Browne,²⁹ "dull not away thy Days in sloathful supinity and the tediousness of doing nothing."

A great deal of perseverance may be required in finding out what interests these people, especially those who have no hobbies. Martin and Gruchy¹⁸ found, in their clinic for salvaging elderly people, 263 patients between sixty and eight-six years of age, subjects of complete boredom largely because they had no hobbies or interests after being retired from active work. With a modified form of psychoanalysis they ascertained the mental history of these patients, and what pursuits or vocations they were interested in at the time or had ever been from childhood. This often gave the clue to the remedy. After ascertaining the physical state of each individual, they made it possible for each one to begin

doing the most suitable kind of work. As a result, the greater number of patients regained self-confidence and initiative, which enabled them to spend their last days in contentment. The point to be emphasized is that we must not let our elderly patients live in the past, but teach them to appreciate the present and the future, for therein lies their happiness.

Many instances can be cited from history of individuals who through their zest for living found happiness in the pursuit of their work, and at advanced ages enhanced their fame in art, science and literature. Michelangelo, the Florentine artist who excelled all other artists of the Renaissance in sculpture and in painting, became renowned in another art, architecture, during the last years of his long life. Ivan Petrovich Pavlov, the Russian physiologist who achieved fame through his researches on the digestive system, became still more famous through his investigations of the reflex action of the central nervous system. Goethe, the great man of letters, is said to have declared when an old man that life, like the Sibylline books, becomes more valuable as fewer years are left. Goethe lived eighty-three years. His activities during the last decade and a half of his life bear witness to the extraordinary width of his interests; art, science, literature; in fact, nothing seemed to escape his ken. In his latter years he wrote some of his finest lyrics, and completed Faust, the crowning achievement of his literary activities. All of us recall the notable achievements of Von Hindenburg, Marshall Foch, Clemenceau, Andrew Mellon, Oliver Wendell Holmes, and Thomas A. Edison in the last decade of their lives.

Instances may be mentioned also of men who for various reasons retired from their main work and found happiness in their latter years in the pursuit of a hobby by which their names are chiefly remembered. For example, Joseph Pellerin became one of the founders of the science of numismatics, especially of the department of medals;³⁰ Samuel Klingenshierna, the Swedish mathematician and natural philosopher, wrote a short time before his death in his ninety-seventh year, a paper embodying his observations in optical science, which won a prize offered by the Academy of Science of St. Petersburg;³¹ John Latham practiced medicine thirty-three years, then devoted his time to the study of natural history, particularly ornithology, and when eighty-two years

old he wrote a "Natural History of Birds" which was published in ten volumes.³² Mme. du Deffand became famous for founding the first literary salon of the eighteenth century. In writing about her and her circle of friends Lytton Strachey³³ said: "They refused to grow old; they almost refused to die. Time himself seems to have joined their circle, to have been infected with their politeness, and to have absolved them, to the furthest possible point from the operation of his laws. Voltaire, d'Argental, Moncrif, Henault, Madame d'Egmont, Madame du Deffand herself all lived to be well over eighty, with the full zest of their activities unimpaired." In each of these instances the mind was kept in a state of healthy activity, and in some instances attention was diverted from bodily ailments, which, happily, left the mind in full vigor.

In many cases the question will arise whether the individual should retire following some acute illness from which he may have recovered, but which has permanently damaged an organ, as, for example, coronary thrombosis. That retirement will reduce mental and physical strain and often prolong life cannot be denied. In some instances it will become necessary. On the other hand, if the patient is one whose life and thought has been his work, who has never taken a real vacation nor cultivated a hobby, a complete change in the routine of his life by retirement may be more hazardous than working a few hours a day.

Although activity maintains the tissues in a state of health, it is not always a panacea for the prolongation of life. In supervising the activities of elderly people the effect of fatigue should be borne in mind. Especially should we bear in mind the effect of effort upon hypertrophied hearts due to hypertension, renal disease, lesions of the valves, and disease of the coronary arteries. The amount of activity which the tissue cells can withstand depends upon their structural integrity, and this in turn depends upon their inherent vitality and modification due to environment.

In caring for elderly people the physician often encounters difficulty in prescribing diets. Here again the personal equation is of great importance. The fact that their welfare depends largely upon a smaller quantity of food than was necessary during their more active years has been recognized since antiquity. All experience, both lay and medical, emphasizes the importance, for the prolongation of life,

of strict moderation in indulging the appetites. Records show that only those people who eat sparingly live to advanced ages. Sir Henry Holland is said to have remarked that losing the teeth is a safeguard against over-eating. If so, this provision is largely offset by the dentist and the *chef de cuisine*, for he would have regarded artificial teeth and culinary triumphs as disguised enemies of a healthy old age. We would not advise against the use of dentures as they enable the individual to masticate his food, they aid in articulation, and they improve the appearance. Since one-half or more of the people past sixty years of age have either an absence of or a diminution in the secretion of hydrochloric acid,^{34, 35} and probably also a diminution in the other digestive secretions, the diet should consist of food that is easily digested and absorbed. Milk is generally the best food for the senescent as it is for the young, although it is wise not to disregard the occasional dislike for it. As a rule it is better to allow the patient to continue with his accustomed diet rather to change to one that theoretically is more suitable. Sometimes we see patients who will not take a sufficient quantity of food to satisfy the needs of the body. By questioning them closely the physician will find some of them really hungry for old-fashioned food as a particular kind of bread or pie while seemingly unable to swallow malted milk or beef broth. Generally a simple diet and the warning to avoid the feeling of satiety may confidently be recommended. On the other hand, when a modification in the diet becomes necessary on account of the presence of disease, the patient's idiosyncrasies concerning food must be borne in mind. Gastro-intestinal disturbances of a functional nature occur less frequently in the senescent than in younger people.

Since the physical well-being of the aged depends largely upon the state of the circulatory system, much attention must be given to the condition of the heart and arteries. With the passing of the years the cardiac reserve strength diminishes, causing dyspnea on exertion. The heart rate may remain normal when the patient is resting and the heart is compensating, or it may be a little faster or a little slower than normal. Extra-systoles occur so frequently they could hardly be regarded as having any significance provided the response of the heart to effort is normal in other respects at this time of life. When the extra-systoles are due to extrinsic cardiac

causes they may be relieved by correcting gastro-intestinal disturbances, by giving attention to the possibility of indulgence in coffee or alcohol, or by treating the anemia which is commonly found in the senescent. The improvement observed in elderly people who complain of dyspnea, pain and tightness in the chest on exertion, sometimes is surprising. While the prognosis must always be deferred in order to observe the response to treatment, yet when the history points to over-exertion or insomnia, and the symptoms readily subside, the prognosis is favorable.

As the years advance, the elasticity of the arteries diminishes. To some extent arteriosclerosis without hypertension may be said to be a normal accompaniment of old age. On the other hand, hypertension with much arteriosclerosis must be considered a pathological change. In a group of 700 patients seventy-five years of age and older, Willius³⁶ found 70.3 per cent had a systolic pressure of 140 mm. of mercury or higher, and 20 per cent had a diastolic pressure of 90 mm. or higher. Our observations in a group of seventy-five patients correspond fairly closely to those of Willius. As the blood pressure varies so much, it is difficult if not impossible to say what is the normal pressure in the senescent. An elevation of the systolic pressure up to 200 mm. of mercury probably is of no grave significance provided the arteries as far as can be ascertained are fairly healthy.³⁷ Finding a blood pressure that is low for the age, in the absence of any pathological condition, suggests a long life for the individual. The boundary line between physiologic involution and a pathologic process in the circulatory system is poorly defined, and the variations are very great.

Although the kidneys probably do not play as important a part in the physical age as the cardiovascular system, still in some individuals they are the first organs to undergo serious degeneration. The changes in the kidneys due to senescence are accompanied by urinary disturbances and alterations in the constituents of the urine, particularly the urea. As a result of a decreased amount of urea in the urine there is an increase in the amount in the blood. In apparently healthy old people an urea estimation of 40 to 50 mgs. per 100 cc. of blood in the fasting state would hardly be considered abnormal. Rappleye³⁸ found increased blood urea in 50 per cent of forty-one patients between seventy and eighty-eight years of age. In many instances

it is difficult if not impossible to determine whether the increased blood urea and the urinary disturbances are the result of lowered metabolism and general atrophy, or to hyperplasia of the prostate gland, or to renal disease. As in the case of the circulatory system we are handicapped in differentiating normal involution and a pathologic process.

Varying degrees of chronic bronchitis with emphysema is a common finding not only among the aged but also in many people, especially men, before they reach the age of sixty years. These conditions seem to be associated with a degenerative process in the bronchi and alveoli in many people who do not give a history of frequent attacks of colds, or of chronic infection in the upper respiratory tract with drainage downward, or of pulmonary infections, or of disease in the circulatory system. Chronic bronchitis and emphysema lower resistance, predispose to infection, and not infrequently they cause more or less disability. In caring for these patients it is necessary to warn them frequently against rendering themselves vulnerable to exacerbations that follow upon acute attacks and also fatigue. The liability of pulmonary complications when senescents are confined to bed is well-known, and requires constant vigilance by the physician. Even then pneumonia develops in many cases. Although this disease has always been considered the great enemy of the aged, Osler referred to it as the old man's friend since it leads to an easy and painless death.

Healthy old people withstand surgical operations better than the mere number of their years is commonly supposed to determine. Before an operation is attempted, however, a thorough preliminary medical examination should be made, including a careful study of the cardio-vascular-renal system. When time permits fluids and glucose should be given in reasonable quantities in order to prevent as much as possible hypohydration and depletion of the glycogen reserve.

In caring for the aged we must bear in mind the fact that their reaction to drugs frequently is different from the reaction earlier in life. The physiological response often is slower, due in part at least to slower absorption from the intestine. Often also the response is more prolonged. For this reason an accumulated action is more likely to occur than in younger people. While elderly people as a rule can take drugs in the doses ordinarily prescribed for

adults, they often cannot take the same total amount before showing toxic symptoms. Some drugs are not tolerated as well by the senescent body. For example, many elderly people are sensitive to digitalis; a smaller amount of this drug is required to digitalize the heart and to maintain digitalization than is ordinarily required. Of other drugs frequently indicated, it has been said that belladonna may excite the cerebral centers and interfere with sleep. We have found it to be well tolerated by the aged. Sedatives and hypnotics should be given when necessary to prevent restlessness which might otherwise increase weakness. They should be prescribed in moderate doses since they often seem to cause mental confusion instead of producing sedation. The narcotics, especially morphine, may cause too much depression, still when they are needed they can be given in moderate doses. According to Nascher,¹⁵ morphine may be given in the same doses as in earlier years if, in order to obviate its paralyzing effect on a weakened respiratory center, atropine is given before the morphine so that their actions are timed to coincide, instead of giving them at the same time when the effect of the atropine comes later. For the excessive cough of bronchitis which is out of proportion to the expectoration, small doses of codein and of sodium bromide may be frequently given. Sometimes these drugs may be given to better advantage in an aqueous solution than in a syrup. Hydrochloric acid, iron, and liver extract are frequently indicated, and they are well borne. The time honored iodides also are well tolerated, and they still are the best drugs for stimulating bronchial secretion in patients with chronic bronchitis, emphysema and bronchiectasis. Syrup of hydriodic acid is one of the best preparations of iodine for the elderly. Unlike all of these drugs, laxatives seem to be well tolerated, even in larger than the ordinary doses, although purgation should be avoided.

In addition to prescribing drugs, optimism is essential in caring for elderly people. They easily become discouraged, knowing as they do that they do not recover from the ordinary ailments as readily as younger people, and also that they cannot have many more years in which to live. We must not forget that the aged feel a sense of loneliness as they have out-lived many of their own generation. Even if members of their own generation survive, it is probable that only by good

fortune can there be any more meetings. The separation of members of the family has often caused the loss of their old homes. Bacon³ quoted Ficinus as saying: "Wise it was of the Emperor Vespasian in his old age not to alter his father's house, being but a mean building, because the old house did put him in remembrance of his childhood: and besides on festival days he would drink in a silver-tipped wooden cup which was his grandmother's." Then, too, they cannot readily adopt the customs of the new generation; they belong to the unforgiving past. They long for kindness, but without the appealing attractiveness of youth, they seldom win new friends. Words of encouragement often give them new hope; in fact, many times an optimistic word will do far more good than drugs. Whether our aged patients are active mentally and physically or in a state of decrepitude so well described in the twelfth chapter of Ecclesiastes, they cling tenaciously to life. It is unwise to accept at face value the old woman's statement that she longs for release from this world. The aged sometime seem to have the hallucination that the dreaded end is near, and by taking to bed they shorten their lives. No good can be accomplished by arguing with them; champagne and strychnine may fail, though they may be encouraged by indirection, as, for example, by bringing their clothes to them.

In conclusion, we may say that old age is as natural as growth and development, and that the crowning glory of life is to grow old gracefully. Old age need not be regarded as a disagreeable period of life. We need the sane thinking of the mature mind, and the wisdom that comes with ripening age and the later years of a well-ordered life and mind. The elderly should be encouraged to avoid melancholy, loneliness, and self-pity, by maintaining self-respect and initiative. The care of the aged more often depends upon the art than the science of medicine; making them comfortable and happy should be the physician's aim.

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DISCUSSION

DR. J. W. PRESTON, Roanoke: Dr. Seward's paper is unique in that he discusses in a most pleasing way the subject of oncoming age both from a broad historical standpoint and from that of physiology to the border-line of pathology. His bibliography is unusually complete, his quotations apt, and his observations accurate.

A paper of this character at the present time is most appropriate in that attention is now focused most sharply upon old age pensions, upon the consideration of the many factors which have to do with longevity, and upon their relation to the future balance between youth and age. Upon every hand discussions are heard relative to the difficulties of those after middle life obtaining employment, of the increased stress and strain incident to the faster moving and quicker thinking of the present. Even our most august tribunal, the Supreme Court, has not found itself immune from a free-for-all discussion and criticism as to the senescence of its members.

The reminder is timely that it is well worthwhile that we observe certain important differences in symptoms touching diagnosis in the aged, notably the fact that in many the sensations grow less acute and that organic troubles of the heart, kidneys, lungs, and alimentary tract may become rather far advanced without particular attention having been directed to them through complaints upon the part of patients.

Dr. Seward's statistics as to the relatively few individuals who grow old with bodies and minds free from pathology are rather discouraging, but lead to speculation as to whether or not, with better organized social service facilities, the possibility of some form of old age relief and a general awakening of the public to the need may bear fruit. More hopeful perhaps as a speculation looking to more physiological advancing years and greater longevity is the present-day intensive drive of the forces of civilization toward improved dental hygiene, the elimination of focal infection elsewhere with their train of dependent diseases, the fighting of venereal diseases in the open, and particularly a better understanding by the public of the importance of cultivating hobbies and pastimes as one goes along in earlier life, so that these may be carried on into advancing years.

Oliver Wendell Holmes' observation to the effect that the reason why women live to a more advanced and happier old age than men is that they have learned to work with their hands and thereby to keep occupied is not the least contribution of this eminent author to medicine.

Touching further the matter of health and longevity of the aging, it is, I believe, agreed by all that the most dangerous season of the year for the aged is that of winter time, when the inclement weather confines indoors, preventing normal exercise and fresh air, bringing with

it infections of the joints, of the respiratory passages, and impaired circulation, and withal drooping spirits and gloomy forebodings. Heretofore it has been only the wealthy who could afford transportation and a change to warmer climate during the winter months. More rapid and cheaper transportation, notably of the railroads, automobile, and, last, but not least, the automobile trailer and aeroplane, are rapidly changing all this. Is it too much to surmise that by degrees a tropical playground may develop for the old as well as the young not only in Florida, but also in the islands of the Caribbean and perhaps even in Mexico and Central America? Another dream, perhaps, but a semblance of reality and a possibility!

Dr. Seward's closing statement, that the care of the aged depends more often upon the art rather than the science of medicine, is in accord with the best thought of our times. It cannot be otherwise than that, like barnacles accumulated through the calms and storms of the voyage, the aged must bear cicatrices of focal infection, of the strain and stress upon heart and vessels, of the psyche and central nervous system. The physician who appraises these at their true value, who gives a sympathetic hearing to what at times are tedious details of the past, who in his demeanor radiates a spirit of hope and optimism, both wins exceedingly grateful patients, and succeeds best in the care and treatment of the aged.

THE VALUE OF POSTURE IN THE EVACUATION OF SECRETION FROM THE TRACHEOBRONCHIAL TREE.

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The promotion of drainage from the trachea and bronchi is essential in the treatment of patients with suppurative diseases of the lungs, and many methods have been employed to produce this result. One method is drainage by posture which has been attempted in a variety of ways.

Frequently the patient is told to lie prone on bed or table and to hang his head over the edge of the supporting structure. Of course, this is useless if one wishes to have the patient in such position that the flow of secretion will be aided by gravity. Elevation of the foot of the bed rarely promotes drainage to an appreciable extent and if the elevation is pronounced the patient constantly slips toward the head of the bed, thus increasing his discomfort. Specially constructed tables provide more comfort but are expensive and difficult to obtain for the average patient.

The most satisfactory method of drainage by posture is to have the patient kneel on the edge of

a chair or low table and place his hands on the floor. In this way the trachea is so inverted that secretion in the lungs descends by gravity. In many instances large quantities of sputum will be expelled by such change in position.

Having reviewed the usual methods of promoting postural drainage, it is well to consider the types of pulmonary lesions which may be benefited by such treatment. Effectual drainage by posture is associated with a moderate or marked degree of physical effort, depending upon the method which is employed. The benefit following drainage by gravity is sufficiently uncertain to make it inadvisable for patients who have tuberculous lesions or who are markedly debilitated.

Pulmonary abscess usually is associated with a stricture in the bronchus communicating with the area of infection in the lung and, until this stricture is dilated to permit the flow of pus, change in posture will not be beneficial. After the stricture

has been dilated, change in posture to promote drainage is seldom required. A patient with an abscess in the upper lobe of a lung is sometimes subjected to a great deal of useless discomfort in an effort to increase drainage by inversion when a sitting position in bed would be the most effective method in promoting the flow of pus from the bronchial opening.

In chronic bronchiectasis drainage of the lungs by posture may be helpful in reducing the amount of fetor of the secretion and in limiting expectoration to convenient periods of the day. Increased physical effort has a tendency to produce pulmonary hemorrhage in patients with bronchiectasis and, when bleeding is occasioned by postural drainage, it should not be employed.

In the utilization of drainage of the lung by posture the patient should be given definite instructions. The time of drainage is important and it should always be done before meals and before retiring at night. If postural drainage is attempted after meals vomiting may occur.

A few patients with bronchiectasis may find that

the flow of secretion from the lung does not begin until after breakfast, in which cases inhalation of steam for ten or fifteen minutes will promote drainage. Cough should be forced and continued as long as secretion can be ejected. At first the patient may not be able to remain in an inverted position for more than one or two minutes at a time, but this period can be lengthened gradually to five or ten minutes. It is extremely important that the bronchiectatic cavities be emptied at night before retiring, as this reduces the stagnation of secretion and makes the odor of the sputum less offensive.

Regular postural evacuation of the tracheobronchial tree carried out over a long period of time will lessen absorption of secretion, reduce the odor of the sputum, and limit the cough and expectoration to convenient periods of the day. This treatment will not cure bronchiectasis, but when it enables a patient to work in association with others without odor to his breath and without constant cough which arouses the suspicion of tuberculous disease, it becomes a valuable form of therapy.

Medical Arts Building.

FEVER, MALARIA, AND SHORT WAVE IN THE TREATMENT OF NEUROSYPHILIS.*

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J. Wagner von Jauregg's introduction of fever therapy within the last two decades has been followed by an accumulation of reports from all over the world, the majority of which corroborate the favorable results obtained when neurosyphilis is treated with a combination of fever and spirochetal drugs.¹ There is some variation of opinion in regard to the comparative effectiveness of the natural fever that follows the inoculation of malaria,² in-

travenous antityphoid vaccine, and intramuscular milk or sulphur; and the mechanical fever that results from hot tubs, hot packs, electric pads, carbon or tungsten light, hot air cabinets (Kettering's method), diathermy, and inductotherm.³ There is still a third group who feel that the pentavalent arsenobenzols (tryparsamide, salvarsan, stovarsol sodium), because of their special efficacy against neurosyphilis, are quite effective without fever.⁴

My own experience has been that malaria is the most satisfactory of the natural fevers and the inductotherm of the artificial fevers, though some clinics still effectively use other fever producing methods. I use drugs alone in the early cases of neurosyphilis, and, unless there are contraindications, they are used before or after malaria and dur-

*Read before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, Va., October 12-14, 1937.

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3. Neymann and Koenig: *Treatment of Dementia Paralytica*, *Jour. A. M. A.*, 96: 1858, May 30, 1931.

4. Epstein-Solomon-Kopp: *Dementia Paralytica*, *Jour. A. M. A.*, 106: 1527-1533, May 2, 1936.

ing the inductotherm treatments. Fever therapy is selected for the acute, progressive, malignant syphilis as the first procedure. The decision of using malaria or the inductotherm is often based on the patient's ability to cooperate. It is necessary to have a certain amount of cooperation on the part of the patient to give fever by mechanical means, but this is not true of malaria. It would, therefore, follow that the earlier cases may receive drugs alone, the advanced cases fever and drugs, and the disturbed cases malaria and the arsenicals. Thus, it appears to me that it is difficult to statistically assay arsenicals, mechanically produced fever, and malaria.

There are differences in opinion not only in regard to the relative value of malarial and artificial fever, but also in the optional amount, the desired height of the fever, and the number of hours above certain temperature levels.³⁻⁴⁻⁵⁻⁶⁻⁷

The appreciation of my own evolution in the selection of cases and in their treatment has led to an analysis of my cases of neurosyphilis treated with fever. In this paper I shall limit my discussion essentially to the practical problems that present themselves to us as practitioners. The first question is whether or not the patient with neurosyphilis should be treated. Cases that have marked deterioration of function, as manifested by paralysis of the sphincters, very severe ataxia, and advanced sensory disturbances, should be spared the discomfort of any treatment regimen.⁸ Aged patients should be treated with caution. The oldest person to whom I have given malaria was fifty years of age, and the oldest to whom I have given inductotherm was fifty-seven years of age. In congenital neurosyphilis the pathological processes can be shown in the brain, particularly the cerebellum, of the syphilitic, premature stillborn.⁹ Juvenile tabes or general paresis usually runs a progressive course to a fatal issue;¹⁰ thus, one should attempt to treat these cases early. In this series my only case

is a child nine years old. I have since given malaria to a baby two years old.

At the Wagner von Jauregg Clinic in Vienna in 1928, I was taught that the contraindications for malaria were obesity, advanced age (50 years), diseased heart, liver, or kidneys, and pulmonary tuberculosis.¹¹ I have tried to adhere to these general contraindications, but in most cases the treatment has to be individualized. Case R.C. was advised to have fever therapy, but he chose to return home on drugs. He was re-admitted to the hospital some months later psychotic and jaundiced. After a conference with his physician and his family, everyone fully appreciating the dangers in malarial therapy, he was given malaria and later returned home mentally clear.

Selecting cases for fever therapy is not so much a question as to whether the patient should have fever, but whether we can afford not to give him fever when we weigh the hazards of treatment and the malignancy of this progressive disease. The tabetic with a morphine habit, the paralyzed, and the insane are such unfortunate states that a treatment which offers a possible way out is certainly recommendable. I always feel that the reward is worth the gamble in the face of moderate hazards provided the disease is not hopelessly advanced.

I now come to the choice of malaria or the inductotherm. The giving of one disease to cure another was recorded in European medicine in the latter part of the nineteenth century.¹² However, it was the work of Wagner von Jauregg that gave to the medical profession fever therapy.¹³ The explanation of why improvement occurs following fever is still an open question. Wagner von Jauregg has repeatedly expressed the opinion that fever is not all in malarial treatment. Dr. Robert C. Cunningham, in the Rachford Lecture given at the University of Cincinnati in 1935, said, "The use of malaria in tertiary syphilis has been rationally explained in terms of increased production and stimulation of tissue macrophages. In this conclusion we entirely concur." A fever of malaria over 102°

5. Simpson, W. M.: Artificial Fever Therapy, Proc. Staff Meeting, Mayo Clinic, 5: 567, September 19, 1934.

6. Perkins, C. T.: Diathermy Treatment of Dementia Paralytica, *Am. Med.*, 26: 546, September, 1931.

7. Bunker, H. A., Jr., and Kirby, G. H.: The Height and Duration of Fever in Relation to the Clinical Outcome in the Treatment of G. P. with Malaria, *M. J. and Rec. supp.*, 121: 413, April, 1925.

8. von Jauregg, J. Wagner: (Ther. d. Gegnew, No. 9, 1936.)

9. Freeman: Neuropathology, Wm. Saunders & Co.

10. Ford: Diseases of Neurosyphilis in Infancy, Childhood, and Adolescence, C. C. Thomas, 1937.

11. Dattner, Vienna, Personal Communication, 1928.

12. Rozenblum, A.: Influence of Febrile Diseases on Psychosis, Bulletin of the Physicians of the Odessa Municipal Hospital, 2: 73-90, February 13, 1876. Translated into German by *Arch. of Psychiat.*, 10: 249-256, 1880.

13. Wagner von Jauregg started to use fever producing agents in treatment as early as 1887, but it was in 1917 that he focused the attention of the medical profession on the therapeutic value of fever.

by mouth seems to be very effective, and frequently these patients do not run a fever of over 104° to 105° and good results are obtained. The fever advised by the electropyrrexia is higher. Neymann¹⁴ states, "Temperatures at 41°C . (105.8°F .) and above, maintained for at least two hours, kill most of the *treponemata pallida* in the human body." This, however, is questioned. A single inductotherm treatment is one in which the temperature is raised to around 106° for two hours at least and five hours above 103.6° . For the first treatment, however, the patient is taken slowly and his temperature often not allowed to go over 104° or 105° . The number of treatments advised is from ten to twenty and some of the enthusiastic therapists have reported giving more. Dr. Emmett F. Hootor, of Farmington, Missouri, reported giving sixty-six treatments at three or four-day intervals with definite improvement being shown first at the fortieth treatment and the patient being discharged after the sixty-sixth treatment (*American Journal of Psychiatry*, Vol. 93, No. 3, Page 258, November, 1936). It is stated by Neymann¹⁴ "All these therapies have one common factor—fever," and it is said in the same paper that electropyrrexia has no toxemia, and therefore, the patients stand high temperatures that are required to be effective against the spirochete. Neymann is of the opinion that those who report electropyrrexia as being less effective than malaria have not carried out the treatment properly. He has not had bad effects from these very high temperature ranges and generally gives a series of twenty treatments. It is my observation that the patient stands the treatment itself fairly well, but the aftermath of vomiting, kidney damage and tremors are not to be dismissed too lightly.

The inductotherm necessitates a rather large initial expense if only a few cases are to be treated. A physician must give the treatment or constantly supervise an especially trained technician. In addition there must be a nurse or a trained attendant. It has the definite advantage of always being available; the treatments can be planned for certain days that are most convenient for the ambulatory patient. In the case of W.C. it was necessary for him to work five days a week in order to keep his position. Antiluetic drugs can be given along with the treat-

ment. One avoids the difficulty of obtaining a known strain of malaria and the uncertainty of the patient becoming affected. The inductotherm allows one to regulate the fever according to what is best for the patient. The patient whose physical status is poor may be given a rapid rise of temperature which is allowed to drop immediately. This spike of fever is both well tolerated and seems to be effective.¹⁵

Malaria is more practical for a doctor who is familiar with fever therapy but who treats only a few patients. The necessary equipment is the physician's understanding of the procedure, the malarial plasmodium, a capable nursing staff, and laboratory facilities. One advantage of malaria is that it can be given uncooperative patients. There are certain difficulties. One may get a malignant strain. This happened in the case of W.C. when the laboratory recorded a tertian malaria. This so-called tertian was given and he developed estivo-autumnal malaria. However, the patient is now well and playing in a local orchestra. The uncertainty of the inoculation and the variable incubation period may make this treatment expensive to hospitalized patients. The patient who has begun to have his fever attacks must discontinue his work. Jaundice is a contraindication and its development caused the termination of fever in two of my cases. Furthermore, there may be a spontaneous disappearance of fever before the patient has had an adequate amount. The frequency of the paroxysms of fever cannot be controlled and one may get an infection with a continuous temperature. Re-inoculation of malaria is a problem for the physician while anemia is a danger for the patient.

The blood taken from a patient during fever (without an anticoagulant) immediately injected intravenously is the most effective and reliable method to give malaria. I have encountered no difficulty in giving 3 cc. of malarial blood without any regard to blood types. This method has enabled me to produce with a tertian strain thirteen consecutive takes in colored patients. Thus, my experience does not confirm the general belief that it is difficult to give tertian malaria to negroes. The addition of anticoagulants usually prolongs the incubation period, even to thirty-five days in one case. The intravenous method has the disadvantage of giving a mas-

14. Neymann, C. A.: The Effect of Artificial Fever on the Clinical Manifestations of Syphilis and the *Treponema Pallidum*, *Am. Psych. Jour.*, Vol. 93, No. 3, November, 1936, pp. 517-532.

15. Kopp, Israel, Boston, Mass., Personal Communication, 1937.

sive infection with perhaps a continuous temperature for a day or two or a daily temperature rise before settling down to a tertian curve. Malaria may also be given intracutaneously, subcutaneously, or intramuscularly. The intracutaneous method has the advantage of getting a milder onset, but has the disadvantage of a greater chance for a negative reaction and a longer incubation period. At the Manhattan State Hospital¹⁶ the mosquito is being used as the infecting agent. It is felt that the milder malaria allowed to run a longer course has been effective in improving their results.

After the patient is inoculated, he is allowed to remain at home, if he is well enough, until the onset of fever, at which time he is hospitalized. During his fever elevation the temperature is taken every thirty minutes. His physical reaction must be observed by a nurse and any irregularity reported to the physician who is always available.

I was taught to allow the patient to have about ten paroxysms of fever, provided he was doing well, which would give about forty hours over 102°F., and if he was not standing the fever well, the severity of these attacks was reduced with small doses of quinine (1 to 3 grains). At present I watch the hemoglobin, red blood count, and the blood pressure, and, if the patient's condition is good, the fever is continued until the symptoms disappear or the patient has run a hundred or more hours of fever without improvement.

The inductotherm procedure is to place the patient in the already heated cabinet in the morning, and to run the temperature up as fast as possible to its maximum height and hold it there the desired length of time. The patient is kept in the hospital until the following morning and some of them return to work that day. The important factor in this procedure is to watch the respiratory or cardiac function during treatment. The patient is given saline, made more palatable with lemon juice, at frequent intervals to compensate for the terrific loss of fluid. During the treatment one has set up for immediate use preparations such as intravenous fluids, coramine, metrazol, and camphor and oil to be used if necessary. It is advisable to proceed cautiously with the aged and those who have some minor pathology,

and when they are not doing well the fever is terminated.

In two instances I have used inductotherm after malaria. In the case of S.B. the patient's serological response following both arsenicals and malaria was not satisfactory and he was given ten inductotherm treatments. In the case of T.B. the patient was inoculated with malaria, his family transferred him to another hospital, and the amount of fever he had could not be ascertained. He improved clinically sufficiently to take the inductotherm and he was also given ten treatments.

The mistake that I have made is the attempt to treat with the inductotherm those who were not really competent enough mentally to appreciate the necessity of treatment. They decided after a few treatments to discontinue therapy, thinking it was unnecessary or having some other reason.

One difficulty that I have encountered with the apparatus was the inability to elevate the temperature to the desired level in the case of D.J. This was manifested during the third treatment and continued during the following five treatments and was the reason for going to tryparsamide without inductotherm. The patient died after having received seven inductotherm treatments and one tryparsamide.

Cases J.R. and P.D. had persistent vomiting following the first treatment, but after intravenous fluids and rest they were able to continue with a satisfactory series. C.T. had persistent vomiting after some of his inductotherm treatments and developed renal pathology. After eight treatments W.C. had severe tremors with marked unsteadiness which lasted three months.

In this study I have approached my problem in retrospection. The tables give a few pertinent facts in regard to the patient's age, time of onset, previous drug treatment, blood Wassermann and spinal fluid Wassermann before treatment, the cases are classified diagnostically, the treatment is recorded, what has happened to the presenting symptoms has been noted, the results have been classified as remission, improved, unimproved, and death, and the time of death in relation to treatment is noted.

Fifty-six cases are reported, because they are inclusive of all cases who have been put on fever therapy and in whom the fever treatment has been terminated or completed regardless of the reason. J.W. was a case of gonorrhea (ten years' duration).

16. Kusch, Ernest, Milam, D. F., and Stratman-Thomas, W. K.: General Paresis Treated by Mosquito-Inoculated Vivax (Tertian), *Amer. Jour. Psych.*, Vol. 93, No. 3, November, 1936.

E.P. had a chancre, acute G.C., and buboes, and was given malaria at the request of his doctor. D.C., a tabetic, was shot after his first paroxysm of fever. B.M. had a clinical picture of tabes with G.C. Thus I shall reduce the series by these four cases, because three of them did not have neurosyphilis and one was shot at the beginning of the treatment.

Malaria was given to forty-two cases with one death (G.N.) during fever. This patient was brought to the hospital in a confused, negative state with a psychiatric picture and a poor physical status. Another (E.B.) died four months after malarial treatment, having been vigorously treated with drugs five years previously. He was given only thirty-one hours as he reacted poorly. The large number of those who improved in this series of malaria may be due to the frequency of the tabetic neuritic syndrome which is known to respond well to fever.

| | |
|------------------|----|
| Remission | 22 |
| Improved | 10 |
| Unimproved | 8 |
| Died | 2 |
| Total | 42 |

The electropyrexia series of nine inductotherms and one diathermy appears worse than it actually is. In the group of seven inductotherms, cases W.H., J.T., and E.S. took three, three, and one treatments, respectively. W.H. was stopped due to his poor tolerance both during and afterward, while J.T. and E.S. chose to stop treatment. C.T.'s treatment was discontinued after the tenth without improvement, as he developed a nephritis. The death of D.T., who had had seven progressively unsatisfactory treatments and then one tryparsamide, may have been due to an arsenical encephalitis.

| | |
|------------------|---|
| Remission | 2 |
| Improved | 0 |
| Unimproved | 4 |
| Died | 1 |
| Total | 7 |

The group of three that had both malarial and artificial fever were cases in which malaria had not been entirely effective. Death occurred in the case of J.M., whose malarial fever was stopped after three chills because of his poor status. He was later

given diathermy at another hospital and this too had to be discontinued after twenty-three hours of fever 103°F. and above.

| | |
|---|---------|
| Remission | 2 |
| Improved | 0 |
| Unimproved | 0 |
| Died | 1 |
| Total | 3 |
| CASES OF PARESIS | |
| Remission | 10 |
| Improved | 1 |
| Unimproved | 7 |
| Died | 3 |
| | 21 |
| CASES OF JUVENILE PARESIS | |
| Improved | 1 |
| | 1 |
| Total Number of Paretics | 22 |
| CASES OF TABES | |
| Remission | 11 |
| Improved | 4 |
| Unimproved | 3 |
| Died | 0 |
| | 18 |
| CASES OF TABO-PARESIS | |
| Remission | 4 |
| Improved | 2 |
| Unimproved | 1 |
| Died | 0 |
| | 7 |
| CASES OF NEUROSYPHILIS* | |
| Remission | 2 |
| Improved | 1 |
| Unimproved | 2 |
| Died | 0 |
| | 5 |
| CASES NOT INCLUDED IN SERIES FOR ANALYSIS | |
| One case shot after four hours' fever .. | 1 |
| One case of chancre—acute G. C. | 1 |
| Two cases of chronic G. C. | 2 |
| | 4 |
| SUMMARY OF RESULTS | |
| Remission | 27— 52% |
| Improved | 9— 17% |
| Unimproved | 13— 25% |
| Died | 3— 6% |
| | 52—100% |

This study has re-impressed me with the results of adequate and inadequate treatment.

*Refers to interstitial syphilis.

| Case | Age Syph. Con. | Previous Treatment | Blood Wass. | S. F. Wass. | Diag. | Treatment | Results |
|------------------|----------------------|-----------------------|----------------|----------------|----------------------|--|---|
| W. S. 43 yrs. | 24 | Yes..... | + | + | Paresis..... | Malaria 33 hrs.† | Depression gone and no memory defect. Remission. |
| R. C. 51 yrs. | 28 | Yes..... | 0 | + | Paresis..... | Malaria 96 hrs. | Mentally clear. Remission. |
| W. C. 43 yrs. | ? | Yes..... | + | + | Paresis..... | 8 Ind. | Tremors after inductotherm for 3 mos.; since has been well. Remission. |
| T. H. 41 yrs. | 32 | Yes..... | + | + | Paresis..... | Malaria 58 hrs. | Emotionally stable; mentally clear. Remission. |
| L. W. 27 yrs. | 22 | Yes..... | + | + | Paresis..... | Malaria 90 hrs. | Depression and headaches gone. "I feel like a new man." Remission. |
| R. W. 17 yrs. | 16 | Yes..... | + | + | Paresis..... | Malaria 50 hrs. | Mental confusion, headaches, and dizziness gone. Remis- sion. |
| W. C. 33 yrs. | | Yes..... | + | + | Paresis..... | Malaria Estivo- autumnal* 200+ hrs. | Mentally clear. We had a very difficult time stopping ma- laria. Remission. |
| S. B. 31 yrs. | 17? | Yes..... | + | + | Paresis..... | Malaria 100 hrs. 10 Ind. | Memory good; mentally clear. Remission. |
| B. D. 35 yrs. | 35 | Yes..... | + | + | Paresis..... | Malaria 105 hrs. | Mentally clear; no headaches; no nausea. Remission. |
| T. B. 42 yrs. | ? | Yes..... | + | + | Paresis..... | Malaria ? hrs. 10 Ind. | No more grandiose delusions. Remission. |
| C. M. 39 yrs. | 39 | Yes..... | + | 0 | Paresis..... | Malaria 101 hrs. | Depression, mental confusion, headaches improved. Gained 12 lbs. Improved. |
| R. M. 40 yrs. | 23 | Yes..... | 0 | + | Paresis..... | Malaria 52 hrs. | Unimproved. |
| G. T. 33 yrs. | 31 | Yes..... | + | + | Paresis..... | Malaria 116 hrs. | Grandiose. No change. Un- improved. |
| J. J. 26 yrs. | 20 | Yes..... | + | + | Paresis..... | Malaria 30 hrs. | Later more fever. Unimproved. |
| F. N. 42 yrs. | 37? | Yes..... | + | + | Paresis..... | Malaria 8 hrs. | Unimproved. |
| J. T. 57 yrs. | ? | No..... | + | + | Paresis..... | 3 Ind. Re- fused to continue. | Unimproved. |
| E. S. 52 yrs. | ? | Yes..... | + | + | Paresis..... | 1 Ind. Re- fused to continue. | Unimproved. |
| G. N. 37 yrs. | 15 | Yes..... | + | + | Paresis..... | Malaria 45 hrs. | Returned from road for mental observation; was negativistic; would not answer questions; in restraining sheet most of time. Died. |
| D. J. 45 yrs. | 37? | Yes..... | + | + | Paresis..... | 7 Ind. Tryp. 9-4-37. | Unimproved. Last treatment Aug. 28, 1937; Sept. 7, 1937. Died. |
| J. M. 36 yrs. | 26 | Yes..... | + | + | Paresis..... | Malaria 3 chills Diathermy 23 hrs. | Mal. Jan. '31. Diath. May '31. Died Sept. '31. |
| E. B. 54 yrs. | ? | Yes..... | + | + | Paresis..... | Malaria 31 hrs. | Unimproved and 4 mos. after treatment died. |
| J. B. 9 yrs. | Cong. | Yes..... | + | + | Juvenile Paresis. | Malaria 35 hrs. | More corrigible. Improved. |
| P. D. 39 yrs. | 23 | Yes..... | 0 | + | Tabes..... | 9 Ind..... | Weakness and pain gone. Re- mission. |
| J. R. 40 yrs. | ? | Yes..... | + | + | Tabes..... | 6 Ind..... | Headaches and depression gone. Remission. |
| H. B. 26 yrs. | 26 | Yes..... | + | + | Tabes..... | Malaria 104 hrs. | Pains in legs and back of head gone. Remission. |
| O. R. 22 yrs. | 22 | Yes..... | + | 0 | Tabes..... | Malaria 101 hrs. | Pains in back, legs, and arms gone. G. C. well. Remission. |

†Hours noted under malaria represent fever of 102° F. and over by mouth.

*This blood was taken from a patient with the diagnosis of tertian malaria.

| Case | Age Syph. Con. | Previous Treatment | Blood Wass. | S. F. Wass. | Diag. | Treatment | Results |
|------------------|----------------------|-----------------------|----------------|----------------|-----------------------------------|---|--|
| E. R. 25 yrs. | 25 | Yes..... | + | 0 | Tabes..... | Malaria 102 hrs. | Pains in legs, headaches, body pains, dizziness, vertigo gone. Remission. |
| P. R. 36 yrs. | 35 | Yes..... | + | 0 | Tabes..... | Malaria 76 hrs. | Pains down spine, burning in heels, nocturnal headaches gone. Gained 25 lbs. Re- mission. |
| J. S. 27 yrs. | 23 | Yes..... | + | + | Tabes..... | Malaria 85 hrs. | Roaring in ears, headaches, and pains gone. Remission. |
| H. R. 34 yrs. | 25 | Yes..... | + | + | Tabes..... | Malaria 93 hrs. | Headaches, insomnia, numb- ness, and pains gone. Re- mission. |
| J. W. 19 yrs. | 18 | Yes..... | + | 0 | Tabes..... | Malaria 81 hrs. | Headache, insomnia, back and leg pains gone. Remission. |
| G. D. 31 yrs. | 31 | Yes..... | + | + | Tabes..... | Malaria 86 hrs. | Body, leg, and head pains gone. Remission. |
| O. L. 40 yrs. | 31 | Yes..... | + | 0 | Tabes..... | Malaria 84 hrs. | Headaches and leg pains gone. Remission. |
| N. F. 23 yrs. | 23 | Yes..... | + | + | Tabes..... | Malaria 103 hrs. | Headaches, memory, pains better. Improved. |
| R. H. 21 yrs. | 21 | Yes..... | + | | Tabes..... | Malaria 105 hrs. | Pains in legs, arms, and body better. Improved. |
| H. Y. 41 yrs. | 33 | Yes..... | + | 0 | Tabes..... | Malaria 47 hrs. | Less pains in legs. Feels better. Gained 10 lbs. Improved. |
| E. B. 22 yrs. | 22 | Yes..... | + | 0 | Tabes..... | Malaria 89 hrs. | Headaches, pains, vertigo better. G. C. Well. Improved. |
| C. T. 33 yrs. | ? | Yes..... | + | + | Tabes..... | 10 Ind. | Inductotherm stopped due to kidney pathology developed during treatment. Unim- proved. |
| W. B. 21 yrs. | 15 | Yes..... | + | 0 | Tabes..... | Malaria. 83 hrs. | Unimproved. |
| J. H. 37 yrs. | 35 | Yes..... | + | 0 | Tabes | Malaria 19 hrs. Jaundice. | Leg and stomach pains; ver- tigo; jaundice. Fever stop- ped. Unimproved. |
| G. M. 29 yrs. | 29 | Yes..... | + | + | Tabo- Paresis. | Malaria 103 hrs. | Confusion, depression, body pains well. Remission. |
| K. A. 29 yrs. | 29 | Yes..... | + | + | Tabo- Paresis. | Malaria 88 hrs. | Headaches, dizziness, pains gone. Remission. |
| G. T. 35 yrs. | 31 | Yes..... | + | 0 | Tabo- Paresis. | Malaria 48 hrs. | Headaches, vertigo, pains, weak- ness gone; no personality disturbance. G. C. well. Re- mission. |
| S. C. 48 yrs. | 23 | Yes..... | + | 0 | Tabo- Paresis. | Malaria 113 hrs. | "Jumping" pains in back and head gone. Vertigo gone. Gained 10 lbs. Remission. |
| G. D. 50 yrs. | 50 | Yes..... | + | 0 | Tabo- Paresis. | Malaria 60 hrs. | Headaches, dizziness, nervous- ness, depression better. "I feel much better now. I can think better." Improved. |
| L. M. 24 yrs. | 23 | Yes..... | + | 0 | Tabo- Paresis. | Malaria 89 hrs. | Headaches, insomnia, dizziness, pains better. Improved. |
| J. M. 30 yrs. | 29 | Yes..... | + | 0 | Tabo- Paresis. | Malaria. Jaundice 5 days after malaria given. | Depressed, poor hearing, head- ache and back pains contin- ued. Jaundice. Fever stopped. Unimproved. |
| A. H. 20 yrs. | 19 | Yes..... | + | + | N. Syph.... | Malaria 103 hrs. | Headache gone. Remission. |
| J. C. 27 yrs. | 20 | Yes..... | + | 0 | N. Syph.... | Malaria 48 hrs. | Internal squint of left eye im- proved. Weakness and numb- ness of left arm gone. Re- mission. |
| B. F. 33 yrs. | 23? | Yes..... | + | + | N. Syph. (Transv. Myelitis) | Malaria 75 hrs. | Return of sphincter control. Able to walk with help. Improved. |
| R. C. 35 yrs. | ? | Yes..... | + | + | N. Syph.... | Malaria 51 hrs. | Unimproved. |

| Case | Age Syph. Con. | Previous Treatment | Blood Wass. | S. F. Wass. | Diag. | Treatment | Results |
|------------------|----------------------|--|----------------|----------------|------------------|------------------------------|---|
| W. H. 36 yrs. | 34 | Yes..... | 0 | + | N. Syph. | 3 Ind. Reacted poorly. | Unimproved. |
| E. P. 26 yrs. | 26 | Yes..... | + | | Primary Syph. | Malaria 107 hrs. | Sore, buboes, and G. C. well. Remission. |
| B. M. 19 yrs. | 18 | No..... | 0 | | G. C. Tabes? | Malaria 93 hrs. | Headache and pain in ex- tremities gone. Remission. |
| J. W. 43 yrs. | Chronic Wasser | gonorrhea for 12 years. mann always negative. | | | | Malaria 89 hrs. | Headaches, nervousness, de- pression, pains in body better. Improved. |
| D. C. 32 yrs. | 24 | Yes..... | + | 0 | Tabes | Malaria 4 hrs. | Killed in gun battle. |

DISCUSSION

DR. E. T. TERRELL, Williamsburg: In the presentation of this paper, Dr. Shield has given us a most interesting study of a subject that has been highly controversial since the advent of electropyraxia a few years ago. Until we have a much clearer concept of the exact mechanism of fever therapy there will be many sound and reasonable arguments as to the relative merits of malaria and electrically produced elevations of temperature in the treatment of paresis. It has been my experience in a review of something over a hundred cases so treated to agree with the speaker, that the best results are to be derived from malarial therapy.

Dr. Shield has made one point which I would like to stress strongly, that is, a careful inquiry into the nature of malarial paroxysms experienced by the patient from whom the inoculation was made. I have also encountered one particularly malignant strain of malaria which was borne very poorly by the patient and which required repeated administrations of quinine, both orally and intravenously before its final eradication from the blood stream. Also I believe a most careful physical examination of the donor of malarial blood is essential. Cases have been reported of severe septicemia presumably produced by the inoculation from an individual who at the time had a small furuncle.

In a recent paper on this subject, Dr. C. O. Cheney has grouped his cases according to the predominating mental reaction prior to treatment, namely, simple dementing, manic-depressive and schizophrenic. This classification, applied to the cases with which I am familiar, shows that by far the best results are obtained in those patients who showed a manic or grandiose reaction.

Quoting Neymann, it has been stated that electropyraxia is non-toxic and for this reason can be better borne by the patient. It has been my experience that, with equal elevations of temperature, the patient is much more apt to enter a state of delirium from electrically produced fever than from malaria. Also in regard to the relative dangers of the two methods, I would like to cite one specific case. An ambulatory patient was given a series of temperature elevations by means of the diathermy and at the end of the series returned to his occupation apparently much benefited by the treatment. He returned two years

later for a second series of treatment. At this time the inductotherm was used and all went well until the termination of the third treatment. When the patient's temperature reached 104.5 degrees he suddenly went into a state of embarrassed respiration, weak and erratic cardiac action, and coma. The machine was cut off, the patient quickly removed from the treatment bag and given circulatory stimulants. In spite of the application of cold sheets, the temperature continued to rise until it reached 109.8 degrees. We were never able to reduce the temperature below 107 degrees before the fatal termination, which occurred six hours later. Unfortunately, a request for a post-mortem examination in this case was refused. I am extremely interested to know whether any similar experience has been encountered during the application of fever therapy.

— (Reporter failed to catch name): Gentlemen, I am frank to admit that I do not know the best form of treatment for neurosyphilis. I rather think the best form is the way I heard of a man treating his girl. He hit her over the head with a large stick. Then, not being quite sure that she was dead, he shot her in the head. Then, still not being quite sure, he pulled out his pocket knife and stabbed her in the heart.

I think malaria has certain disadvantages. At times it is difficult to stop the malaria, and probably the things you stop it with are not any too good for the patient as a whole. Then, again, we do not know what malaria does to the heart and spleen and kidneys and other organs. Bad malaria is a bad thing, as we know who have seen it when we were boys. There is a good deal of cachexia and other things that follow malaria.

Diathermy is uncertain and does not get results. The inductotherm can be controlled very well, but I do not believe that alone it is very much better than malaria. I believe, however, it is a very good treatment, because, as Shield has suggested, you can give arsenical treatment during the fever or at the end of the fever.

The thing is not settled. If a temperature of 106 kills the spirochete, why does not one treatment kill them? The theory is that they wrap themselves up in cellophane or something else, so you give other treatments in the hope that they will poke their heads out and be killed. Some advocate giving up to twenty treatments.

The age of the patient is a factor. It is not wise to give heavy arsenical treatment to patients of advanced age. As to heat therapy, better not give too heavy heat treatments to patients sixty-five years of age or older, because their arteries do not react as quickly as those of younger patients.

I had not heard or read Dr. Shield's paper before and did not know what he was going to say, but I feel that he has worked this up extremely well. On the other hand, we must realize that there are a good many cere-

brospinal cases that are too old for much treatment of any kind. Brain cells are destroyed; cord cells are destroyed; and nobody but God can put back destroyed nerve cells, and He does not do it. But we also realize that there are perivascular constrictions and toxic conditions that are affecting some of the cells, and those cells can be brought back by treatment. We have had some cases in which there was very marked parietic speech change. Those cases have been brought back to normal, so far as I could tell.

IMPLANTATION OF COSTAL CARTILAGE FOR THE CORRECTION OF NASAL DEFORMITIES.*

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Various transplants have been used in rhinoplasty, such as tooth brush handles, ivory, paraffine and celluloid, in place of autogenous grafts. Since the World War the pendulum of opinion has swung from isogenic material to autogenous grafts. These grafts may be classified as follows:

1. Costal cartilage;
2. Cartilage and bone;
3. Bone.

The disadvantages of autogenous bone grafts are

1. Difficulty in shaping the graft;
2. More easily infected;
3. Is slowly absorbed.

The advantages of autogenous costal cartilage are

1. The graft continues to be nourished;
2. It lives without changing size;
3. More resistant to infection;
4. Is easy to obtain;
5. Can be readily shaped;
6. Is available in various sizes, and excess amounts can be stored for future use.

TYPES OF DEFORMITY AND INDICATIONS FOR CORRECTION

1. Saddle nose
 - (1) Those caused by syphilis;
 - (2) Those resulting from traumatism, operations on the septum and septal abscess.

The indications for the correction of nasal deformities may be classified as follows:

1. Cosmetic;
2. Functional;
3. Economic factor.

The nose is not only the most conspicuous feature of the face, but it has also a very important function in its relation to respiration and the proper aeration of the sinuses.

The restoration of the nose is important to both men and women in securing a position in the business world. Even though the deformity may be due to injury, these people inevitably bear the stigma of being a syphilitic suspect, for the lay public always associates saddle back nose with syphilis.

TECHNIQUE IN OPERATION

Anesthesia may be local or general. Our preference is general anesthesia. A vertical incision fifteen cm. long extends through the right rectus muscle, thus exposing the cartilage of the seventh, eighth, and ninth ribs. The right side is always chosen for the avoidance of possible concussion of the heart. The entire thickness of the cartilage may be removed, but usually it is necessary to remove only a part of it. The amount removed should be twice that indicated by the measurements for the proper correction of the deformity. Careful handling of the cartilage is important. The incision in the nose may be made

1. At the bridge of the nose;
2. The columella incision or the intra-nasal incision.

We prefer the incision at the bridge of the nose for the following reasons:

1. Direct view;

*Read before the Virginia Society of Ophthalmology and Otolaryngology, Staunton, Va., May 8, 1937.

2. Sterile field;
3. Implant is more easily introduced.

Extreme care should be exercised in freeing the sub-cutaneous and loose tissue and also in the preparation of the bed of the graft. Accurate measure-



Before and After Operation.

ments must be made from the infra-glabella region to the nasal tip, and from the tip to the spine of the superior maxilla. The excess cartilage is hoarded beneath the skin under the right breast. In the event a second operation is necessary, sufficient material will be available. After the implant has been



Before and After Operation.

properly placed, the wound is closed, and sterile dressing is applied without pressure.

Complications following implantation of costal cartilage may occur as follows:

1. Infection;
2. Curling of graft.

The latter can be avoided by thorough removal of all perichondrium and accurate preparation of the bed and placing of the graft. The post-operative

complications following excision of costal cartilage may develop as follows:

1. Hematoma;
2. Injury to the pleura.

Both of these complications may be avoided by exercise of careful surgical manipulation and strict observation of anatomical land marks.



Before and After Operation.

POST-OPERATIVE CARE

The right chest wall must be carefully strapped for at least one week as for a fractured rib. If infection in the nose develops, surgical drainage must be instituted at the earliest possible moment. Promptness in dealing with this complication will prevent absorption of the cartilage, thus obviating the necessity of a second operation. The patient is usually able to leave the hospital at the end of one week.

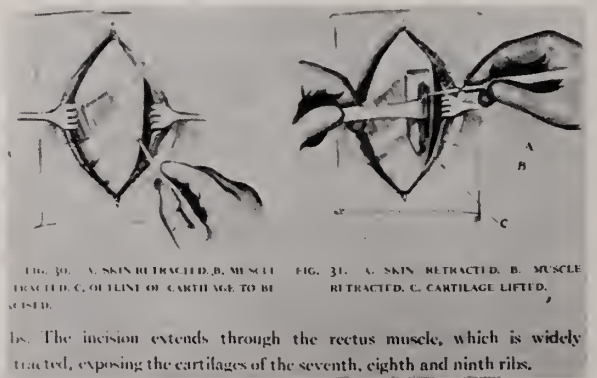


FIG. 30. A. SKIN RETRACTED, B. MUSCLE RETRACTED, C. OUTLINE OF CARTILAGE TO BE RAISED.

FIG. 31. A. SKIN RETRACTED, B. MUSCLE RETRACTED, C. CARTILAGE LIFTED.

bs. The incision extends through the rectus muscle, which is widely retracted, exposing the cartilages of the seventh, eighth and ninth ribs.

After Sheehan.

CONCLUSIONS

1. Autogenous cartilage is superior to inorganic material for the correction of nasal deformities.
2. Costal cartilage remains in place and continues to be nourished and is not absorbed.

3. Correction of the saddle nose not only serves a very definite cosmetic purpose, but oftentimes it changes the patient's entire outlook on life and restores the individual to his place in the economic and social world.

4. Correction of these deformities also restores anatomic and physiological function of the nose as relates to respiration and proper aeration of the sinuses.

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ANALGESIA AND ANESTHESIA IN OBSTETRICS.*

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The subject proposed for this evening's discussion was "Safe and Sane Obstetrical Anesthesia." I have not entitled my paper this because at the present date I do not believe there is any such thing. An analgesia or anesthesia to be safe and sane would (1) have no effect on the progress of labor, (2) would not cause restlessness, (3) would not cause any untoward changes in cardiac action or blood pressure, (4) would not be irritating to mucous membranes, (5) would not have a deleterious effect on the fetus, and (6) would leave no after-effects with mother or baby. Needless to say, this ideal has not yet been reached by any drug or combination of drugs that have been offered. Some day such a drug either will be found or synthesized, for the mother in childbirth demands relief and, as you know, when a woman wants something she generally is successful in getting it. Today, however, for the relief of her pangs of labor she must be prepared to pay occasionally her life and much more often her baby's.

Simpson in 1846 gave ether during the second stage of labor and one year later gave chloroform for the passing over the perineum of the child's head. Long,¹ I have recently learned, gave ether to his wife at the time of her second delivery in 1845, adding another first to the long list of priorities of which we Southerners well may be proud. Chloroform is still being used to a great extent in England and the South in the last moments of labor. It is not without its dangers, as the studies of Stander have pointed out. Yet, from the standpoint of the child, there is no safer anesthetic. It is quick in action, quickly recovered from, and has no unpleasant after-effects.¹⁵ *But it is dangerous,* and for that reason in most clinics it is used not at all.

Ether is irritating to the mucous membranes and I think too slow in action to be of much benefit during the end of labor. For obstetrical operations it would seem to be the best anesthetic if we except ethylene.

Relief during the perineal stage was not enough to give the woman ease from her pain. Steinbüchel in 1902 gave her "twilight sleep." Like a wave it swept the earth. The result was disastrous, more I believe, because of the misunderstanding and mishandling of scopolamine than to the drug itself. In St. Louis thousands of cases have received scopolamine without the terrible mortality and morbidity that followed its first use.²

The rectal-ether analgesia technique using morphine and magnesium sulphate was used in obstetrics in 1923.³ Ten years before, Gwathmey had proven its analgesic effectiveness. The author has used this technique, using scopolamine instead of magnesium sulphate and has liked it.

In the past decade we have had a flood of the barbiturates. Phenobarbital, sodium amytal, nembutal, ipral, dial with urethane, pernocton, evipal, sodium alurate, seconal, have been suggested, to name a few. Emmert recently said he had achieved good results with a barbiturate by rectum.⁴ Each author has extolled his particular drug and each one has been condemned in turn.

Vinyl ether was suggested by Bourne but has had very little following. I mention avertin only to condemn it.

Paraldehyde has received impetus lately both by rectum and by mouth. I have had no experience with this but do not believe I would like the disagreeable odor. Even the babies are said to have the odor of the drug on their breath for days.

At Jersey City, Cosgrove has had excellent results with spinal anesthesia but hardly anyone else

*Read before the Halifax County Medical Society, at South Boston, Va., June 10, 1937.

seems to have the temerity to imitate him. The few that have have not had the same success that he has. The author had a short experience with sacral anesthesia. This was given up after 50 per cent failures.

To go into the advantages and disadvantages of all the procedures advocated for analgesia, amnesia, and anesthesia would call for a lengthy monograph, so we will consider only a few points.

No woman should suffer during childbirth more than is absolutely necessary. The experience of Nielsen⁵ that most women want to go through childbirth without relief has not been that of other physicians. Neither can I believe the psychic after-effects of having had relief are as disastrous as she has pictured. True, it would be best for the sake of the baby if all women were delivered without analgesia or anesthesia. I do not think the same about the mother. The nervous dread, the sufferings, sometimes for hours, the tearing, splitting pain of the second stage should and can be helped. In Russia the highest order of merit obtainable, the order of Lenin, was given to Lourje for the popularization of anesthesia during childbirth. What physician would allow a kidney stone to pass without crying for assistance. The comparison is crude, but think of it.

Parturition today is often compared to that of former years and centuries. The primitive or jungle woman is supposed to have had easier labors and recovered from them quicker. It seems unfair to compare a people in close contact with nature, inured to pain, whose psychology is one of fatalism, to our present-day race of "civilized" people whose environment and life have made them seek to escape unavoidable pain. The modern woman perhaps has as much hardihood as the bush woman but her psyche is different. Even today, in the lowest stratum of society we find less need of drugs than in the more cultured. The author has been surprised many times at the ease in which women can have their babies and at the quickness of their recovery. But the primitive woman was not wholly without pain. A reindeer bone found in a cave in Europe pictures a parturient woman with a reindeer standing over her. We can assume that it was hoped that the strength of the animal would pass into the laboring one and help⁶ her with her travail. So the cave woman must have had some pain. The Australian black is pounded, beat, cut, and knocked

around when in labor until the pain of bearing a child is nothing.⁷ Our great ancestors, the monkeys, sometimes cry out when delivering their young.⁸ Many primitive races have very painful but very quick labors.^{9b} Perhaps, though, judging from the reports of numerous observers,⁷ as a whole, primitive labor was much easier than it is for our parturient today. Thoms¹⁷ thinks there is not much doubt that it was easier, and says, "The answer is to be largely found in the fact that these races have the round or normal pelvis universally, and, furthermore, that the admixture of different racial stocks found in civilization is not present." "Be that as it may, we know that the women have a great deal of pain and it is our job to alleviate it as much as we can."^{9a}

It used to be that the expectant mother did not want to suffer. Now it is the demand that she remember nothing at all of labor. The lay press, magazines and books, are partly responsible for this, preaching as they have in favor of their own pet barbiturate which will confer amnesia so that when the first pain is felt she will know nothing else until the child is suckling at her breast. And patients are demanding this. With their demands they have caused such competition among physicians that often, in their zeal to confer this amnesia, drugs are given to excess, with consequent maternal and fetal mortality and morbidity.

A favorite question that is asked the obstetrician is, "What method do you use?" Our answer to that should be that we have no method. Each obstetrical case is an entity to its self. What may be excellent for Mrs. A. might not do at all for Mrs. B. *How* are we to meet our patients' demands—and they are insistent?

First, I would say through education and psychiatry. A study at The Sloane Hospital for Women in New York gives promise of showing worth-while results from the treatment of the pregnant woman's psyche by removing her fears.

It is my firm conviction that most of the trials and tribulations the pregnant and parturient woman goes through is because of the tales her relatives, friends, and, strange enough, even strangers take the time to tell her. Why women find so much pleasure in telling the enceinte female of all the cases of difficult labor they have heard of, going into details with enjoyment, telling her that they hope she won't have the awful time they had, is

beyond me. No wonder when "her time" comes it is with fear that she approaches the childbirth bed. The fear may be subconscious but nevertheless it is there. It is for this reason that I insist that my patients and their husbands tell no one, not even the closet relative, of the marvelous changes that are taking place in the mother's body until it is perfectly obvious to every one what is happening. She reads no literature except under my direction. By the time her friends and relatives know about the pregnancy I hope to have cleared her mind of the misconceptions of labor and to have put her into a mood of anticipation of the wonderment of childbirth rather than the horror of it. Yet I fail more often than not. Generations of whispering and tale-bearing cannot be effaced in a few months.

The best way of removing the pain of labor would be to section all pregnant women at term according to a lay periodical. Believe it or not, I have heard of physicians doing this.

Rather than produce an amnesia, it would seem to be better obstetrics to remove as much of the pain as possible. And the best agent we have is morphine. Morphine given after the establishment of labor in the primiparous patient will do much to reduce the pangs of labor. It can be repeated if the end of labor is estimated to be more than six hours away. Close to the end of the first stage, a rectal injection of ether in oil would very likely ease the second stage for her. Some authors add a barbiturate with the morphine but I believe such a mixture of drugs is to be frowned upon. Both are depressing, and the ether in oil adds to this. Arnold,¹⁶ after trying many different methods of anesthesia, is coming back to the Gwathmey technique. This method of analgesia is not, however, without danger. There is always the possibility of postpartum hemorrhage, and very often because of the injudicious use of morphine there are "blue" babies.

The formula of the ether-oil is as follows: Ether, two and one-half ounces, quinine alkaloid twenty grains, alcohol forty-five minims, olive oil *q. s. ad* four ounces. I think it wise to have a second formula, using only ten grains of quinine for those cases in very active labor having hard contractions. Some advocate leaving the quinine out all together, which is commendable. The technique used by the author, which has been the usual one, is: A hot plain water enema is given soon after the patient

starts into labor. Morphine and scopolamine are given to control the patient until the first stage is about three-fourths over. Morphine is not given if labor is predicted to end in six hours. With the patient on her side the buttocks are coated with lubricating jelly. Through a catheter inserted six to eight inches into the rectum, four ounces of the mixture are given, after having first instilled one ounce of olive oil. One ounce of olive oil is given afterwards. The whole amount of fluid is passed into the rectum by milking the catheter which is then clamped and quickly removed. A pad is held over the rectum until the patient has had three pains.

This procedure has been used extensively in the home³ and very few untoward results have been reported. It has a wide margin of safety if carefully managed. There is danger present, though, and perhaps it should be a hospital procedure.

In the use of the barbiturates, which give only an amnesia, restlessness is the main contraindication. At present nembutal, or pentobarbital, is the favorite barbiturate having usurped the place of sodium amytal. Sodium amytal has more of a depressing action and takes longer for its excretion. Nembutal, however, is the more toxic of the two. Side boards are often necessary on the bed, and an attendant must be present at all times. After the experiences with pernocton, intravenous injection is not used except in isolated instances. The author, as well as others, has overcome this restlessness with small doses of morphine. Some recommend rectal analgesia as a way of preventing it, though very often, because of the uncooperativeness of the patient, this fails. It is generally recommended that huge doses be given at the induction of the amnesia, Lull¹⁰ using nine grains of nembutal at the beginning. Four and one-half grains seem to be the average. It would seem to me that in view of the reports of Willcox¹¹ in which collapse has occurred after only three grains, an initial dose of one and one-half grains is preferable, giving us a chance to find out the action of the drug on the patient. (By making holes in the capsules quicker action is obtained.) Scopolamine is used as an adjuvant by many. Here, again, hospitals are the best place. Many of these labors have to be terminated by forceps because of the restlessness making a sterile draping of the patient difficult except under anesthesia. One can make no generalizations as to

how the barbiturates will affect the patient. One primipara to whom I gave morphine and twelve grains of nembutal said she recalled every thing that happened prior to delivery; and she did. Another, a multipara, to whom I gave only three grains had complete amnesia, talked as one intoxicated and, really, from what she said I am thankful her husband wasn't there. Next day she remembered nothing of the six hours labor she had had.

If someone would remove the odor from paraldehyde, judging from published reports, there are great possibilities in its use.

Most of the pain of the second stage of labor can be removed by elective low forceps and episiotomy. This was first advocated by DeLee. I firmly believe in it. Not only do I think it better for the mother but also for the baby. *But*—quoting from Dennen,¹² “Even though easy cases can be handled easily and safely with forceps there are dangers connected with the elective procedure that make it unsafe for general use. * * * A forceps delivery is a surgical procedure and should be treated as such. * * * Good anesthesia is important. * * * Hemorrhage is an ever-present danger. * * * Asphyxia of the baby * * *.” *Unless one is prepared and trained to handle any emergency that may arise and is prepared to use modern methods of resuscitation of the newborn it is better to let the patient deliver spontaneously.* I offer this as an axiom. I am not speaking of indicated operations but elective procedures.

Local anesthesia should be used more. DeLee asks, why anesthetize the whole body when we need it in only a small part. It is not depressing and is not irritating. It can be employed to great advantage, Bradford has shown, when inhalation anesthesia would seem unwise. By familiarizing ourselves with the technique, more of us can be of greater service to our patients.

What about the patient who is delivered in the home? Although hospitalization of obstetric patients has proceeded by a yearly increasing percentage, thousands of women are being delivered in the homes. The vast majority of these are handled by the general practitioner who has had no special obstetrical training. These patients surely are entitled to their analgesia and anesthesia even as their sisters in the lying-in beds with their numerous attendants. Many of them, however, suffer just as

their mothers suffered and the only surfeit offered is that, “It is nature.”

Edwards¹³ uses pentobarbital (nembutal) for the first stage, waiting until the pains are less than five minutes and “hurting considerably.” To control the restlessness he uses chloroform, often to such an extent that pituitrin has to be given to flagellate a relaxed uterus back into action. His initial dose is six grains. That seems like poor obstetrics. He does not worry about the restlessness because, as he says, “The beds found in these homes are usually so low there is not much danger if the patient should happen to fall out.” I feel that nembutal in the home should be used in very small doses.

Brittain and Hobbs¹⁴ control the first stage of labor with morphine, sometimes combined with a barbiturate. At the beginning of the second stage they start giving ether and pituitrin, “not over three minims at a dose and never more often than fifteen minutes.” Apparently such a thing as pituitary shock is not thought of. If the anesthesia is so deep that pituitrin is needed to stimulate the uterus in order to consummate delivery we had better leave off the anesthesia. I disapprove strongly of medical forceps.

For the primipara morphine is very helpful in the first stage. It may be combined with small doses of barbiturates or scopolamine and it is not necessary to wait until she is hurting considerably. If labor is long it may be repeated. During the perineal stage small “whiffs” of chloroform will give much relief even if the patient is not unconscious. Ether is not quick enough in its action to be of much benefit. Neal says he gives “whiffs” of it sometimes but only as a placebo.

The multipara and the woman in premature labor are more of a problem. Morphine would be dangerous because of its effect on the fetus; in the former the time element, in the latter the immaturity of the respiratory center. It is surprising indeed sometimes, what bromides and understanding encouragement can do to make the labor easier. Small doses of barbiturates will help; also rectal analgesia, if the physician knows how to use it and appreciates its dangers. At the delivery light chloroform anesthesia will ease the tearing pain. No chloroform is given if rectal analgesia has been used.

In recommending chloroform, I am assuming that the practitioner will not use it in cases of pre-eclampsia, and that only enough will be used to

deaden the pain at the actual passing over the perineum of the child's head. Even if Potter¹⁵ uses it to the extent of surgical anesthesia and in his extensive practice over many years has had no fatalities, we must still be cognizant of its dangers.

SUMMARY

Although we have at present no "safe and sane" obstetrical analgesia and anesthesia, we must answer our parturient's cry for assistance during her travail. With the agents at hand we must recognize their shortcomings and dangers and use them, not by any method, but by deliberate planning, keeping the interest of the patient always foremost. Even by judicious use of the drugs we have, sometimes the end-result will be unhappy. Prenatal encouragement and a dispelling of fears as much as possible perhaps is a potent factor in rendering labor easier.

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TRAUMATIC LACERATION OF THE INFERIOR VENA CAVA, WITH RECOVERY—CASE REPORT.

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A rather thorough investigation of surgical literature discloses a number of instances of accidental perforation of the inferior vena cava; most of them have occurred during a difficult right nephrectomy; a few, however, are the result of small perforations due to bullets and knife points. I have not been able to find a single case of extensive traumatic laceration and hence my reason for reporting this unique case. Such cases are either very rare or else they have been slow in getting into the literature.

Cole (*Annals of Surgery* for 1917) reported an accidental injury to the inferior vena cava during

the removal of a large retroperitoneal tumor. The laceration was so small that a single stitch controlled the hemorrhage, and after a stormy convalescence the patient recovered. Condict (*Annals of Surgery* for 1924) reported a case of scissors-perforation of the inferior vena cava, colon and ileum with recovery. Priestley and Walters (*Proc. of Staff. Meet. Mayo Clinic*, 1933) reported opening the vena cava in four cases while doing a nephrectomy, in two of which the opening was intentional for the purpose of removing malignant tissue invasion, and in the other two an accidental tear was made. The tears were apparently small in as-

much as the bleeding was controlled by clamp or suture. All four of these cases recovered. Sheppe (*J. A. M. A.* for 1922) reported a case of bullet wounds of the small intestine and a nick in the stomach. The bullet finally rested in the anterior wall of the vena cava. During attempted removal it eluded the surgeon's grasp and disappeared. The perforation was closed by suture. Autopsy revealed a thrombus at the site of perforation, death being due to peritonitis.

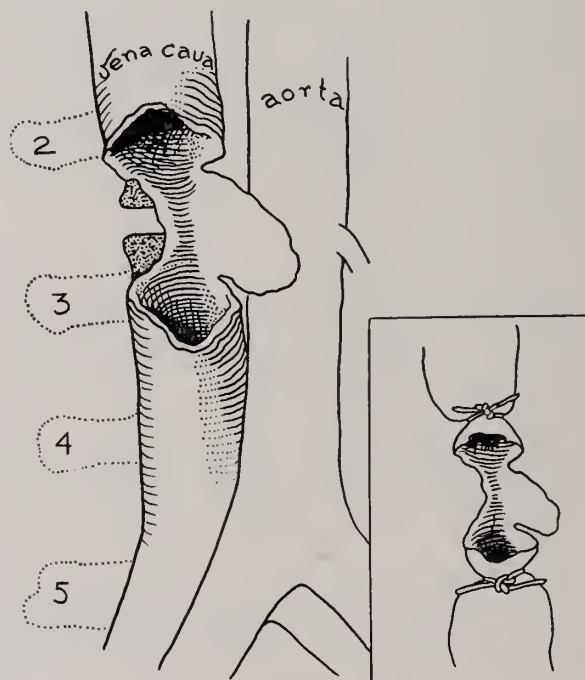
Nine cases of complete ligation of the inferior vena cava for the treatment of severe puerperal utero-pelvic phlebitis have been reported by Walters and Priestley. They also quoted Pfaff who reviewed the literature and found nineteen cases of deliberate ligation incident to the removal of renal malignancy with a mortality rate of 32 per cent.

As a field for surgery, the inferior vena cava is a poor one. With the possible exception of a deliberate opening for a tongue of invasive new growth all surgical attempts in this field are enforced by that most urgent and alarming of surgical "calls," hemorrhage—a situation comparable to death in that we are never prepared for it.

Case Report: M. L. B., aged ten years, was admitted to St. Luke's Hospital, July 20, 1934, having come sixty-five miles by ambulance to the hospital. Three hours before arrival she had been given morphine sulphate, gr. one-fourth. Examination showed the patient to be mildly shocked, in a state of deep narcosis, and to have a rapid pulse. When the towel was removed a loop of transverse colon about six inches long was seen protruding from a circular wound, one and one-half inches in diameter, at McBurney's point.

Local preparation for operation was deferred until the patient was anesthetized. During this she struggled and blood spurted about eighteen inches above the wound. Preparation from this point on was hurried. On opening the abdomen, there was a gush of blood. Numerous mesenteric rents seemed not to be bleeding yet the abdomen continued to put forth more blood than it was possible to mop away. Obviously so massive a hemorrhage could come only from one of the great vessels. The anesthesiologist reported the patient was "doing badly." The wound was hastily enlarged; finally all the small bowel was lifted and on further sponging a rent was seen directly behind the umbilicus. The peritoneum was so widely torn that the rough abraded

bodies of the second and third lumbar vertebrae were visible and could be felt. On moving one of the many blood saturated gauze packs a "hissing" sound was heard. Just as I had satisfied myself that the inferior vena cava was practically cut in half by a J-shaped laceration and I had applied forceps to either end, the patient became pulseless and a second later stopped breathing. Artificial respiration at first seemed useless. After a lapse of about two minutes she breathed again. In the meantime with No. 1 plain catgut a hurried ligation of the inferior vena cava above and below the



J-shaped laceration of inferior vena cava showing ligation above and below the point of laceration; also abraded bodies of vertebrae.

rent was done. The abdomen was quickly closed as she breathed irregularly. A hurried transfusion was done.

The following morning the patient was alive but white and practically pulseless. Capillary response in the toes was absent. Morphine was used freely. Fluids were withheld for fear of exciting vomiting which would increase the venous tension thereby loosening the catgut ligatures. After two small transfusions the hemoglobin reached 24 per cent on the fifth post-operative day. The legs and thighs were markedly edematous, and the epigastric vessels were prominent. Progress was slow but each day slightly more comforting. How long would the

plain catgut continue to do its work? There was numbness of the extremities, and later vague paresthesias.

Today, nearly three years later, she is perfectly normal except for numbness in the inner thigh regions.

AGRANULOCYTOSIS, WITH REPORT OF A CASE.*

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In this paper no attempt will be made to report original data or observations, but a summary of the salient features of the disease as we now know them, which differ in many respects from the conceptions of a few years ago.

Agranulocytosis is a disease characterized by fever, marked prostration, ulcers of the mucous membrane surfaces, high mortality, and marked reduction or absence of the granulocytic white cells from the circulating blood. Many synonyms have been proposed—leucopenia, malignant neutropenia, granulopenia, agranulocytic angina, granulocytopenia, etc., the latter being probably the most correct name, though not the most common one.

Vague references to a condition of this kind are found in the earlier literature, but Schultz¹ in 1922 gave the first real description, emphasizing its high mortality, lesions in the throat, prevalence in middle aged women, and the frequency of jaundice. Following his paper, several other writers took up the subject, though an extensive literature did not accumulate until comparatively recent years, when most of the progress in this disease has been made.

The etiology remained obscure following its description for the next ten years, when it was attributed to allergy, endocrine imbalance, infection, metabolic disturbance, and other causes, until 1931-34, when amidopyrine and related drugs containing the benzene ring were incriminated by Kracke,² Madison and Squier³, and others following which there have been a flood of confirmatory reports. At present it appears that amidopyrine is the chief etiological agent, but various related compounds are also thought to be capable of producing the chain of symptoms giving rise to the disease, among which compounds are dinitrophenol, novaldin, cinchophen, quinine, allonal, peralga, arsphenamines, gold salts, and certain barbiturates, and, more recently, the new

and very popular drug sulfanilamide is believed to have caused some cases.

Agranulocytosis seems to occur more often in middle aged women, between forty and sixty, and in the better classes, especially those associated with the medical profession, as nurses, doctors' wives, hospital employees, etc., though all ages, classes, occupations, and both sexes are subject to the disease. A probable explanation for the above is an increased use of amidopyrine by women of this age and occupation, rather than an increased susceptibility to the disease. Negroes rarely have it. The disease apparently increased in incidence from 1922 until the past two years, since when there has been some decrease, possibly due to the lessened use of the causative drugs. Rawls⁴ administered 100,000 doses of amidopyrine to four hundred patients, four (1 per cent) of whom developed agranulocytosis, three of whom died, while the remainder were apparently not harmed in the least by the drug.

The pathological features at autopsy are: necrotic ulcers, usually in the mouth and pharynx, but may be on mucous membranes and rarely on the skin; often broncho-pneumonia; sometimes a slightly enlarged spleen; and characteristic findings in the bone marrow, which consist of normal erythrocytic elements, a great number of immature granulocytes, chiefly myeloblasts, and many plasma cells and lymphocytes, though the marrow changes vary somewhat with the stage of the disease. Evidences of a secondary septicemia are found in about half of the cases.

The symptoms and signs are fairly characteristic. The onset is usually acute, with sore throat, hyperpyrexia, and extreme prostration, chills, headache, vomiting, and muscular pains are frequent. About 50 per cent of cases have jaundice. Anemia, purpura, marked splenomegaly, hepatomegaly and generalized lymphadenopathy are rare and usually mean that there is a mistake in the diagnosis. The mucous

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Read before the Southside Virginia Medical Association, Burkeville, Va., September 14, 1937.

membrane ulceration is necrotic, foul, and often resembles that of diphtheria. The ulcers are not sharply margined, with overhanging edges, little surrounding inflammatory reaction, and may show a variety of micro-organisms. The regional lymph nodes are usually somewhat enlarged. The urine usually shows albumin and casts, and may contain bile. Most characteristic is the marked and progressive decrease in the granulocytes of the peripheral blood, which has been conclusively shown to precede the onset of symptoms. Lymphocytes are relatively markedly increased, though absolutely decreased. Total white counts usually range from 2,000 to 500, though they may be less than 100. Red cells are decreased only slightly or none at all by the disease itself, though, of course, an anemia may have been present prior to onset. Platelets are not decreased. A positive blood culture is found in one-third to one-half of cases.

The diagnosis as a rule is not difficult, if the characteristic features are kept in mind. Two main classes of diseases may cause confusion—the other blood dyscrasias and the diseases causing ulceration of the mucous membranes. Of the blood dyscrasias, “aleukemic leukemia” and aplastic anemia are perhaps most likely to cause errors, and these are best recognized by their effects on other portions of the bone marrow—the red cell and platelet forming functions being reduced and a marked and progressive anemia and/or purpura being present. Generalized carcinomatosis, lymphosarcomatosis, or Hodgkins’ disease affecting the bone marrow must be considered. Biopsy from the marrow of the sternum is easily done and will settle the diagnosis if still in doubt. Differentiation from diphtheria, Vincent’s angina, and other ulcerations of the mucous membranes is usually easily done by blood count, culture, and smear.

Prophylaxis is accomplished by the more careful use by the profession of the suspected drugs and their avoidance through education by the public. When necessary to keep a patient under prolonged medication with one of these compounds, white blood cell counts should be checked at regular intervals. In patients showing a marked reduction of granulocytes following the administration of one of these medications, the preparation should be promptly discontinued, even though the patient be symptom free, and warning should be given against its future use. In those patients known to have had one or more

attacks of agranulocytosis, special precautions should be taken, counts should be done frequently, and treatment promptly instituted if there is any tendency to relapse, which relapse may occur spontaneously. Frequently attacks can be aborted if treatment is prompt.

Prognosis in the acute cases is always grave. Various observers report mortality rates from 33 per cent to almost 100 per cent, the majority being near the higher figure. In the more or less chronic cases with occasional relapses the outlook for the individual attack is somewhat better, perhaps because they are often less severe and the patient and physician have some warning of the danger, but the patient sooner or later usually dies of the disease. The absence of complications such as bronchopneumonia and sepsis, and relatively high counts are of better prognostic import, though some patients have been known to recover with extremely low counts. Early treatment greatly improves the prognosis.

A large number of procedures have been advocated in treatment, many of which have their enthusiastic supporters, and most of which have been subject to attacks as useless or harmful by one or more writers. Perhaps most widely advocated, especially a few years ago, was treatment with pentnucleotide K-97, prepared commercially by Smith, Kline, and French Laboratories of Philadelphia. This is given in doses of ten cc., preferably intramuscularly, sometimes intravenously, dissolved in saline, early in the disease, at least twice daily during the acute phase, and in larger amounts in the earlier stages, tapering off to smaller amounts after the patient improves and the white count returns to normal, though it must not be stopped too soon. Intramuscular doses of this drug rarely give severe reactions, but intravenous administration gives frequent, severe, and dangerous immediate reactions, which atropine is said to lessen, but will not abolish. These reactions are the chief hazard of pentnucleotide intravenously, and it is usually withheld by this route. Results with this preparation should not be expected before five to ten days.

Next to pentnucleotide, liver extract has found much favor, three cc. doses being given intramuscularly twice daily, with or without a half ounce of oral liver extract by mouth twice daily. Many believe this to be the most valuable measure. More recently, adenine sulphate, fifteen to thirty grs., has

been advocated intravenously in fifty to one hundred cc. of normal saline. This has the advantage of not producing reactions and at times gives rise to a quick response. Small doses of arsphenamine are suggested by some, though this is not wholly rational, as this drug has been known to produce the disease. X-ray over the long bones appears to give some results at times, though here the difficulty is to give a stimulating dose without producing any depression on bone marrow activity. Small, frequent blood transfusions are usually used as supportive measures, though recently some apparently harmful effects have been noted. Bone marrow extract, fetal tissue, non-specific proteins, and leucocyte cream have their supporters. Local treatment should be cautious and conservative, as more harm than good may result. Of course, adequate nursing care is of utmost importance—with maintenance of fluids, parentally if necessary; symptomatic treatment; and general supportive measures. The physician should bear in mind at all times those drugs which seem to cause the condition, and should be especially careful to see that none of these in any amounts whatsoever are given the patient. The opiates appear to be the least harmful of the sedatives and analgesics for use in these cases.

SUMMARY

Agranulocytosis is a disease which has become prominent within the past fifteen years. It is apparently due to amidopyrine and certain related compounds containing the benzene ring. It is usually easily diagnosed if suspected, but difficult to treat at any stage, especially late, and is of grave prognosis.

CASE REPORT

Mrs. C. T. M., white female, age forty-three, married, was admitted to Lakeview Hospital, July 22, 1937, with chief complaints of headache, nausea and vomiting, fever, and some sore throat, with the following history: She had been in usual health, which was only fair, until a little over three weeks before, when she awoke with a headache and some nausea, which was not unusual with her. However, she thought she had some fever and there was generalized aching with the headache, which was not customary. She remained in bed one and one-half weeks, gradually improving, and was then up and around until one week before admission, when she had an attack similar to the previous one, with

violent headache. She was seen by her doctor, who suspected pyelitis because of tenderness over the left kidney, but the urine was negative. He prescribed some aspirin and a cathartic. Her husband gave her a patent medicine called "H-C" powder.

Since then she continued to have severe headache, nausea, fever, and some chilly sensations, with much prostration, aching, and malaise. Her throat was somewhat sore for the previous few days, but not markedly so. Past history was negative except for some anemia a few years ago, which had responded to jeculin, and frequent headaches.

Upon physical examination, the patient was found to be quite ill and prostrated, temperature 101, pulse 100, respiration 30. The throat was reddened, with several small necrotic ulcers, which showed little surrounding inflammatory reaction, on the soft palate and tonsils, over which was a grayish, non-adherent exudate. Lungs were clear, but the suggestion of an apical gallop rhythm was heard over the heart. There was some general abdominal tenderness, especially in the upper portion, and the border of the left lobe of the liver was barely palpable. There was a positive Babinski on the left. The urine showed two plus albumin and casts. The red blood cells were 3,780,000, hemoglobin 70 per cent, white blood cells 650, 98 per cent lymphocytes and 2 per cent polymorphonuclear neutrophils. Wassermann, blood culture and agglutinations were negative. Vigorous treatment was begun, with ten cc. of pentnucleotide intramuscularly twice daily, three cc. liver extract intramuscularly twice daily, small whole blood transfusions of 250-300 cc. daily or every other day, and saline gargles. Fluid was supplied intravenously and subcutaneously. Daily white blood counts were taken, the count rising to 2,250 on the fourth day after admission, when she was clinically best, but falling the next day to 750, and remaining near this figure until death. Five days after admission a slight icterus was noted, and patient developed a severe diarrhea that responded poorly to any treatment. Eight days after admission crepitant rales were heard in the right lung base, which progressed to consolidation the next day. In spite of the oxygen tent, stimulants, and supportive measures, she died ten days after admission with broncho-pneumonia.

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VARIOUS MANIFESTATIONS OF LATE TOXEMIA OCCURRING IN SUCCESSIVE PREGNANCIES.*

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On June 8, 1936, at 8:30 P. M., a 38-year-old para vii, three weeks from term, was admitted, as an emergency, to the Obstetrical Ward of the Sinai Hospital because of marked hypertension, generalized edema, albuminuria and visual disturbances. This patient was an unregistered case, who had not been attending the prenatal clinic but was being cared for by a private practitioner.

Family History: Negative except that one grandfather had Bright's Disease.

Past History: Usual childhood diseases, including scarlet fever at two years of age without post-scarlet fever nephritis.

Menstrual History: Began at fourteen, occurred regularly every thirty days except during amenorrhea during pregnancy. Usually lasted four days with a moderate flow and without any pain. Last menstrual period September 28, 1935.

Marital History: Married nineteen years. Husband in good health. Para vii. Oldest child seventeen years; youngest six. Four living children. One child was a still-born premature infant; another died of mastoiditis at fourteen months of age.

Obstetrical History:

1. 1918.—Eclamptic toxemia of pregnancy.

Was taken to the Johns Hopkins Hospital with typical convulsions at thirty weeks' gestation. Had ten ante-partum convulsions. Labor was induced by means of a bougie with the delivery of a still-born, premature infant. The patient had no post-partum convulsions and an uneventful afebrile puerperium.

2. 1919.—Full-term spontaneous delivery of a live child without exhibiting manifestations of a toxemia of pregnancy.

3. 1921.—Full-term spontaneous delivery of a live child without exhibiting any of the manifestations of a toxemia of pregnancy. For these two deliveries she was cared for by a private physician.

4. 1923.—During this pregnancy the patient attended the Woman's Clinic of the Johns Hopkins Hospital. Her ante-partum blood pressure varied from 130/70 to 162/105 and traces of albumin were found in her urine on two occasions. A diagnosis of low reserve kidney was made. The patient was allowed to go to term and had a spontaneous delivery of a normal child weighing 3580 grams, after a four and one-half hour uneventful labor. This puerperium was also afebrile and uneventful, the blood pressure falling to 120/80 four days' post-partum.

5. 1928.—Patient was again seen in the obstetrical

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division of the Johns Hopkins Hospital during the middle of her pregnancy. At this time her blood pressure was 158/100 and she had a faint trace of albumin in her urine. She was admitted to the hospital for study at which time she was seen by Dr. John Whitridge Williams who made a diagnosis of chronic nephritis complicating pregnancy and advised immediate termination of pregnancy and sterilization. The patient refused this procedure, was released from the hospital, and was delivered outside by a private doctor of a live full-term child.

6. 1930.—Patient again had manifestations of

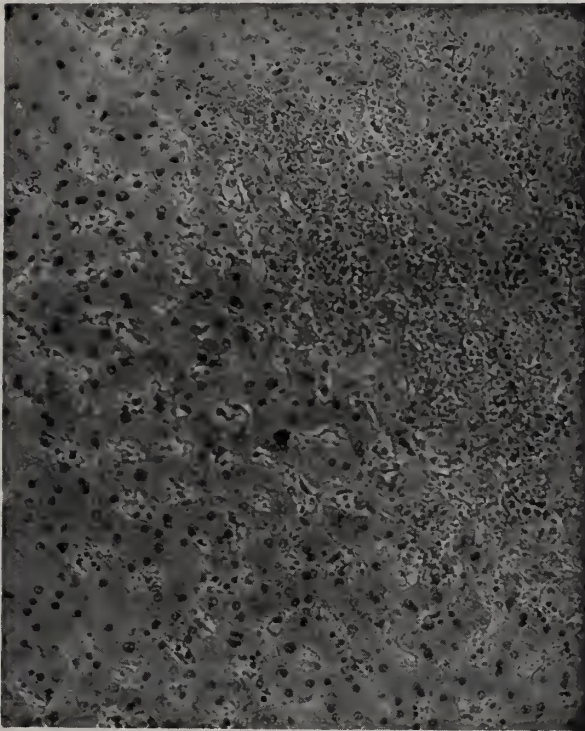


Fig. 1.—Section of the liver showing focal periportal hemorrhagic necrosis with edema of the surrounding area. In other areas not shown the periportal regions had undergone complete autolysis.

chronic nephritis complicating pregnancy but was delivered by a private doctor of a full-term live child.

The patient was first seen at the Sinai Hospital in 1934 in a non-pregnant state, at which time she was admitted to the hospital for study with chief complaints of persistent right lower quadrant pain of one year's duration and dysuria. During her hospital stay of twelve days her temperature was normal. Her physical examination revealed a persistent hypertension with a peak of 180/100 and

moderate generalized arteriosclerosis. Her eye-grounds showed dilatation and tortuosity of the veins with slight thickening and tortuosity of the arteries and definite arterio-venous compression. There were no hemorrhages or exudates and no evidence of albuminuric retinitis. Laboratory findings were significant. The urine showed four plus albumin with many hyaline casts, granular casts and an occasional red blood cell. The Fishberg concentration test showed a maximum concentration of 1.016. The phenolsulphonephthalein test showed a 55 per cent recovery of the dye within two hours. The urea clearance test was 54 per cent of the normal average. The Addis count on the urine showed R. B. C. 1,344,000, and W. B. C. 8,064,000; casts 960,000. The cystoscopic examination was negative. The blood chemistry showed a urea of 53.92 mgm. per cent and sugar of 0.92 mgm. per cent. The serum protein was 7.90 gms. per cent with an A/G ratio of 1.3.

A diagnosis of chronic glomerulonephritis was made and the patient treated for this with a salt-poor, low protein diet, and advised not to have any more pregnancies under any circumstances.

Present Illness: As was stated at the beginning of the paper, the patient was brought into the hospital at 8:30 P. M., June 8th, as an emergency, three weeks from term, because of a fulminating, late toxemia of pregnancy. On admission, the patient had a generalized edema, especially marked about the face, eyes, hands, and feet. Her heart was moderately enlarged and a rough systolic murmur was heard over the entire precordium. The aortic second sound was more intense than the pulmonary second sound. The blood pressure was 200/100. The pulse was regular with a rate of 88 per minute. Respirations were not labored and the rate was twenty-four per minute. The lungs were clear to percussion and auscultation. The abdomen was distended by a gravid uterus with the fundus palpable 5 cms. below the xiphoid. The fetus lay in L. O. A. with the fetal heart heard in the left lower quadrant at 140 per min. The head was floating. Rectal examination revealed an undilated cervix without any effacement. The urine showed a three plus albuminuria with an occasional granular cast. There were no red blood cells, and the specific gravity was 1.006. The blood count was within normal limits. Blood chemistry revealed

a blood urea of 64 and a uric acid of 4.8 mgm. per cent.

The patient was not in labor and complained only of epigastric pains, headache, and dimness of vision. She was given morphia gr. one-fourth and slept through the night very well. At 6 A. M. a medical induction of labor with castor oil and quinine was begun. Within the next six hours the patient began to complain of very severe headache and inability to see. She talked incoherently and had some urinary incontinence. Breathing became stertorous and the patient became stuporous and perspired freely. Treatment included chloral hydrate gr. xxx

cyanotic with each seizure. At the end of the four-hour period her pressure was 190/130. 100 c.c. of 50 per cent glucose was given intravenously as a diuretic as the patient had voided only once since admission, and also to serve as a source of nourishment, to combat acidosis, and to serve as a dehydrating agent. Twenty-four hours after admission her respirations became very shallow and her face, lips and nails became very cyanotic. There were definite periods of apnea so that the morphine was discontinued and carbon-dioxide and oxygen inhalations were administered. The total amount of morphine given was two and one-half grains in twenty-four hours. 250 c.c. of 25 per cent of glucose was given and the pressure dropped to 140/70 and the pulse rose to 126 per minute. Thirty-six hours after admission the patient had a spontaneous frank breech delivery of a still-born premature child that weighed 1850 grams. The third stage was uneventful and the placenta showed no nephritic changes. Blood chemistry taken soon after delivery showed a blood urea of 110 mgm. per cent, and a carbon-dioxide combining power of 45 vol. per cent.

Since the patient was anuric, 500 c.c. of 10 per cent glucose was given with fifteen units of insulin. Two hours after delivery the respirations became very bubbling, and many coarse, moist rales could be heard over the chest and there was expectoration of frothy sputum. A diagnosis of pulmonary edema was made. The blood pressure was now 100/50. The patient was given atropine gr. 1/100, and a venesection was done with the withdrawal of 200 c.c. of blood. Digalen 8 c.c. (twelve grains) was given and the patient was placed in an oxygen tent. The respirations became Cheyne-Stokes in character and the pulse weaker, the extremities cold and cyanotic and forty-six hours after admission the patient died.

The impression, based on the past history of eclampsia and nephritis, and on the laboratory findings of a high blood urea, was that the patient had died of an exacerbation of a chronic nephritis complicating pregnancy with resulting uremia and pulmonary edema. However, a complete autopsy was obtained, which showed not only a chronic glomerulo-nephritis with some more recent degenerative changes, but also the hemorrhagic peri-portal necrosis of a recent eclampsia gravidarum. The au-

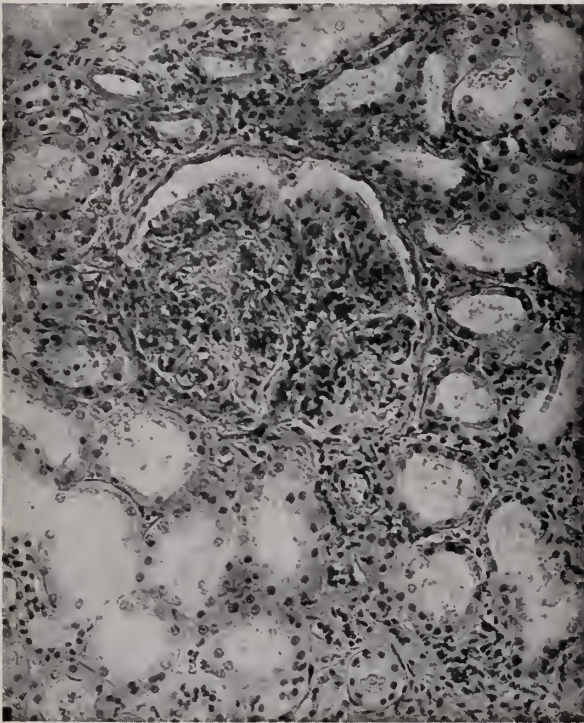


Fig. 2.—Section of the kidney showing adhesions of Bowman's capsule and thickening of the intercapillary membrane indicative of a chronic glomerulo-nephritis; also swelling and fatty degeneration of the tubular epithelium, the result of recent degenerative changes accompanying eclampsia gravidarum. In other sections, hyalinized glomeruli and marked interstitial changes remained as evidence of a chronic glomerulo-nephritis.

rectally t. i. d., and morphine sulphite gr. one-fourth every half hour if the respirations were above 16 per min. Sixteen hours after admission the patient had her first convulsion which was typically eclamptic, and was followed by coma which lasted one-half hour. Soon after the initial convulsion uterine contractions began. At this time her blood pressure had risen to 240/140. Within the next four hours she had four more convulsions becoming

topsy also demonstrated the presence of a cardiac hypertrophy and dilatation, chronic myocarditis, coronary sclerosis and generalized arteriosclerosis. The lungs showed pulmonary edema and bronchopneumonia.

CONCLUSION

This case is of interest because it shows:

1. Various manifestations of late toxemia of pregnancy occurring in successive pregnancies.
2. Eclampsia does give origin to chronic nephritis in certain instances.

3. Eclampsia may recur at a subsequent pregnancy many years later.

4. The ultimate fate of repeated pregnancies in the face of toxemia is death to the patient.

5. How closely eclampsia and nephritis with pregnancy can resemble each other, so that only by an autopsy can one distinguish the one from the other and that sometimes they exist concurrently, as in this case.

Monument Street and Rutland Avenue.

THE USE OF SULFANILAMIDE IN MENINGOCOCCUS MENINGITIS WITH AN UNUSUALLY RAPID RECOVERY IN ONE APPARENTLY HOPELESS CASE.

ROBERT D. BICKEL, M. D.,
Roanoke, Virginia.

The three cases herein described were referred to the medical service of the Jefferson Hospital by Dr. W. N. Breckinridge of Fincastle, Virginia, with a diagnosis of meningitis.

Case 1.—On October 4, 1937, L.—H.—, a twenty-year-old white man, was admitted to the medical service of the Jefferson Hospital from a nearby county jail complaining of severe headache, nausea, and stiffness in his legs and neck. Two weeks before admission this man had developed a severe head cold with coryza, sneezing and “stuffedness in his head.” This cold had almost cleared up when, four days before admission, the patient began to complain of stiffness and soreness in his legs. Three days before admission he was nauseated, felt generally uncomfortable, and had a severe headache. Two days before admission he complained of stiffness and soreness in the muscles of his neck. The headache continued to be quite severe. Past history and family history non-contributory.

Admission Physical Examination—T. 102.6 degrees F.; P. 90; R. 20; blood pressure 130/70.

General appearance: A well-nourished, well-developed, white male who was lying quietly in bed on his right side with his knees drawn up. Respirations were deep and regular. Skin was dry and hot. Over his chest and abdomen were numerous small, irregular hemorrhagic spots which did not blanch on pressure.

Reflexes: Kernig sign positive. Ankle jerks and knee kicks very active.

The rest of the physical examination was essentially negative.

Laboratory Findings.—Blood: Hgb. 98; RBC, 4,360,000; WBC, 9,400; 76 per cent neutrophils; 15 per cent small lymphocytes; 6 per cent large lymphocytes; and 3 per cent eosinophiles.

Urine: Neutral; Sp. gravity 1.012; Microscopic—Pus 3 plus; blood (chemical) 2 plus; albumen 1 plus.

Spinal fluid: Under increased pressure—3,860 cells per cu. mm. (mostly polymorphonuclears); globulin, trace; sugar, trace. Smears showed gram negative diplococci. Cultures yielded diplococcus intracellularis.

Treatment: The patient was given an initial dose of forty grains of sulfanilamide, and thereafter sulfanilamide, grains 15, and bicarbonate of soda, grains 10, q.4.h., to doses 10. Then he was given sulfanilamide, grains 10, and bicarbonate of soda, grains 10, q.4.h., to doses 19, making a total of 380 grains of sulfanilamide over a period of five days. Spinal fluid withdrawn the day after admission had a cell count of 2,500 with a trace of globulin. No organisms were seen in the stained smears. On the fourth day after admission spinal fluid showed a cell count of fifty-five with gram positive and negative organisms seen in the stained smear.

The temperature dropped steadily to normal limits on the second day after admission and remained normal during the patient's stay in the hospital.

On the third day after admission the patient no longer complained of headache and Kernig's sign was no longer positive.

After six days in the hospital the patient was discharged in care of his family physician.

Case 2.—On October 7, 1937, a visit was made to the jail, from which the first patient had been admitted, to see two more of the inmates who had become ill.

J.—D.—L.—, a fifty-four-year-old white man, had twenty hours previously developed a slight head cold. A few hours thereafter he complained of increasing headache and some stiffness and soreness in his neck. When seen about noon on October 7, his axillary temperature was 104.6 degrees F. There was marked rigidity of his neck. The patient was comatose and looked very bad. Doubt was expressed as to the patient's ability to live until the next morning. Spinal fluid had a cell count of 500 cells per cu. mm. with positive globulin and sugar. Smears and cultures revealed the presence of gram negative intracellular organisms.

About 4:00 P. M. that day he was given seventy grains of sulfanilamide, dissolved in one pint of warm tap water, by means of a stomach tube. The stomach tube was used because the patient was so moribund that he could not be made to swallow. Thereafter he was given fifteen grains of sulfanilamide q.4.h. At 10:00 P. M. October 7, he was given 80,000 units of anti-meningococcus serum intravenously in 900 cc. of normal saline. At this time the axillary temperature was 104 degrees F.

At 3:00 A. M. October 8, the axillary temperature was 101 degrees F. The patient seemed much better, and asked intelligently for a cigarette on several occasions. At 7:00 A. M. October 8, the patient was sitting up in his bed asking for something to eat. He seemed clear and in possession of his faculties. At this time the temperature by mouth was 101 degrees F. and thereafter the temperature gradually dropped to normal limits by the following afternoon. The headache had disappeared and the neck was less stiff.

By October 11, the patient seemed to be well recovered clinically and the sulfanilamide was discontinued. Follow-up lumbar punctures were not done.

Case 3.—A twenty-seven-year-old white man, who was first seen on October 7, 1937, had two days before begun to complain of headache and dizziness. On the morning of October 6, he had complained of

severe occipital headache, stiffness and soreness in his neck and some nausea. When seen on October 7, he complained of occipital and frontal headache, stiffness in his neck and back, loss of appetite, nausea and some photophobia. His temperature was 101.3 degrees F. (by mouth); pulse 94; respirations 19. He was lying on his left side, eyes away from the light, with his knees drawn up. Spinal fluid withdrawn at this time showed 0 cells per cu. mm., with no organisms in the stained smear. Globulin and sugar normal.

He was given forty grains of sulfanilamide as an initial dose and thereafter fifteen grains q.4.h. over a period of five days. During this period his clinical symptoms gradually cleared. The headache and stiffness in his neck decreased, so that after five days he no longer complained. A follow-up lumbar puncture was not done.

The jailin which the patients herein described were confined is a three-story brick structure. The first floor is the quarters of the jailer and his wife. The two floors above, containing four rooms, are prisoners' quarters. At the time the above patients were seen, there was a total of twenty-eight persons, besides the patients, crowded into these four upstairs rooms. These twenty-eight persons were given fifteen grains of sulfanilamide t.i.d. for six days beginning October 7, 1937. No other cases of meningitis developed.

The method of treatment used on these patients, and the use of sulfanilamide as a prophylactic measure was suggested by Dr. George B. Lawson, Chief of the Medical Service, Jefferson Hospital.

SUMMARY

1. Three patients with meningococcus meningitis were treated with large doses of sulfanilamide. One patient received in addition 80,000 units of anti-meningococcus serum intravenously. No attempt is made to contrast the relative merits of these two therapeutic agents.

2. As a prophylactic measure sulfanilamide was given to twenty-eight persons who were exposed almost continuously to these sick patients. In these people no cases of meningitis developed. From this one experiment conclusions are only suggested as to the value of sulfanilamide as a prophylactic agent in meningitis.

3. Sulfanilamide dissolved in water and given by mouth may be a means of attaining more rapid absorption of the drug.

4. An amazing recovery in an apparently hopeless case who received massive doses of sulfanilamide and 80,000 units of anti-meningococcus serum is described. It is felt that the remarkably quick recovery

was due to sulfanilamide rather than the slower acting anti-meningococcus serum.

Jefferson Hospital.

BREECH PRESENTATION.

ALBERT J. RUSSO,

Senior Medical Student, Medical College of Virginia,
Richmond, Virginia.

I feel that what I learned from this case was actual and of value to me because it was my outside O. B. case which I referred to the hospital with the diagnosis of breech presentation. I was more or less handicapped, since the case was my first outside O. B. and I had never done a rectal examination before, and barely examined one or two abdomens in the O. B. Clinic in the Out-Patient Department. "Fortified," therefore, with a very meager obstetrical practice, and an ultra-conservatism which denied and eliminated too rash a regime, I was forced into this, my first introduction to the practice of obstetrics.

As I entered the darkened room, made somewhat brighter by the power relegated to kerosene, I at once perceived the unsuspecting patient lying in bed, bearing her pain with apparent nicety and calm despite the sombre fact that she was single. At 10:30 P. M. pains were occurring every one to two minutes and lasting thirty seconds. Observation in the vulval region disclosed what seemed to be an occasional extrusion of greenish black and brownish material. Her blood pressure was 145/85, and her disposition was noble, to say the least. The fetal heart sound was audible in the right lower quadrant; however, it impressed me as being weak in intensity, although its rhythm was regular and its rate 140 per minute.

A rectal examination was done, which, since it was the first undertaken by this writer, disclosed the fact that the patient did absolutely have a cervix, that it was soft and, what astounded me more, I felt that the cervix was dilated 1-2 cm. I did not feel anything hard which might have been interpreted as a head. The thought occurred to me that here was purely a negative case; there was nothing bony, but, since I heard the fetal heart low in the right lower quadrant, I could not fathom the disappearance of the head, and it was embarrassing not

to account for its absence. However, Leopold, *via* his many maneuvers, gave me an idea that there was something hard in the fundus, on the right side chiefly. This man of Dresden also enabled me to palpate the smooth curved back to the right and anterior. His fourth maneuver was performed, but the unexpectancy of the presentation was not revealed except by a negative answer. Apparently everything was negative, but certainly the woman must be pregnant—of that I was certain.

While I was pondering the matter I watched the vulva, and again I noted this darkish material hastening through the vagina and soiling the linen. Another rectal and nothing was revealed. I began to harbor the thought that this, my first case, must be an oddity.

I listened again with my stethoscope, not one area but all over the abdomen. When I played the instrument near the right upper quadrant, lo and behold, the fetal heart sounds were strong and distinct. Another look at the hairless vulva, and the exuding material assumed the aspects of meconium. No head by rectal examination further added to criteria, made my case a breech, and immediate conversation with the intern on Outside O. B. suggested an ambulance.

My first case was transported to the hospital, and I saw it delivered the next day of a bouncing baby, *via* breech procedure. This was pleasure, indeed, since I noted that more mature opinion in one or two cases said that the case was ROA.

This case taught me that breech cases are comparatively infrequent (3.3 per cent), and that their labor is longer, more severe and exhausting than the vertex type. Flaccidity of the abdomen is said to favor breech presentation, but this case was a primipara with no laxity of abdomen. Further, the patient's pelvis was normal, and the head was not

hydrocephalic, so it is chance alone which made this case what it was.

The prognosis for the child in breech presentation is worse, especially in primiparas. Premature rupture of the membranes occurs earlier in breeches and makes for a longer and harder labor since the breech or footling is an uneven dilating wedge. I learned that episiotomy in these patients assists nobly in maintaining the integrity of the perineum. I learned, too, that the delivery of the after-coming head (at least eight minutes after the umbilicus is seen) is usually delivered by the Mauriceau, or Prague, procedure. In difficult cases, Piper has designed forceps which make the way easier for the baby.

Abstracts

Simplified Analgesia in Urology.

Joseph F. Laibe, associate clinical professor of Urology at Loyola University School of Medicine, Chicago, in an article under the above caption says that the analgesic state should be deep enough to allow the surgeon to carry on the operation, but, when practical, less of the anesthetic or analgesic should be used to at least partly eliminate some of the operative risk. A dose of 1/32 to 1/20 grain Dilaudid plus 1/150 to 1/100 grain scopolamine given about one-half an hour before cystoscopy has been found to produce a satisfactory analgesic effect with adequate relief of pain within a shorter time than with morphine. In general, this combination holds these patients so well that other analgesics are not required. Patients weighing 120 pounds or less are given the smaller doses while the larger amounts are reserved for larger patients.

For major surgery, Dilaudid, 1/20 grain, and atropine, 1/150 to 1/100 grain are given about forty-five minutes before the operation, which is usually done under ethylene or nitrous oxide. In general, Laibe found Dilaudid a satisfactory opiate for pre- or post-operative use, as well as in such conditions as renal colic, bladder spasms, etc. In concluding his report he states:

"1. Adequate analgesia for cystoscopies is often obtained by using morphine, grain 1/6 to 1/4, or Dilaudid, grain 1/32 to 1/20, with scopolamine, grain 1/150 to 1/100, depending on the weight and irritability of the patient. If such a procedure is used the risk of depression is not as great as when inhalation or spinal anesthesia are used.

"2. Dilaudid has proved to be a more satisfactory opiate

than morphine for the relief of pain in cystoscopies or other surgical cases, in renal colic, tumors, etc., since there is practically no nausea or other evidence of stimulation accompanying its use, and there is less necessity for post-operative catheterization."—*Ill. Med. Jour.*, March, 1938.

Public Health Statistics

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia.

The report of the State Health Department's bureau of communicable diseases, as compiled for the month of March, shows the following cases compared with the same month in 1937.

| | 1938 | 1937 |
|-----------------------------------|-------|------|
| Typhoid and Paratyphoid ----- | 11 | 17 |
| Diphtheria ----- | 62 | 60 |
| Scarlet Fever ----- | 171 | 90 |
| Measles ----- | 2,348 | 934 |
| Meningitis ----- | 12 | 53 |
| Poliomyelitis ----- | 5 | 3 |
| Rocky Mountain Spotted Fever----- | 0 | 1 |
| Typhus Fever ----- | 0 | 0 |
| Undulant Fever ----- | 0 | 2 |
| Tularemia ----- | 3 | 1 |
| Smallpox ----- | 0 | 1 |

WPA HEALTH PROJECTS IN VIRGINIA

WPA funds in the various projects supervised by the State Department of Health have been effective in increasing mass protection against disease. Through the medium of WPA, four thousand acres of surface of actual and potential mosquito-producing waters have been drained. Sixty-three miles of ditches were required to accomplish this work.

Stimulated by these activities, local communities realize as never before the value of this type of sanitary engineering. Thousands of dollars have been contributed by local communities for the respective projects. Moreover, positive assurances that funds will be forthcoming for maintenance have been received.

As is well known, Tidewater Virginia has been the victim not only of the malaria carrier but of the pest mosquito also. The vacation possibilities of that section, which equal those of other well-known American resort localities, failed to be realized fully because of this annoying insect. This situation for many years had been realized.

Sanitary engineering, under WPA, has accomplished what to many was considered to have been the impossible. For all practical purposes the pest

mosquito has been removed from that section. Not only has this activity added greatly to the Tidewater Section as a vacation and health-giving locality for vacationists, but it represents a very general service. Rich and poor, white and colored alike, have been freed from the attacks of the malaria mosquito and the pest mosquito.

Again, since the start of the WPA program on July 1, 1935, the Department has reviewed and approved plans and specifications for waterworks and sewerage improvements aggregating \$4,008,715. Of this construction, 60 per cent already has been completed; the remainder is well under way. The protection against typhoid fever represented by these improvements is obvious.

For a number of years the Department has been active in community sanitation. The polluted spring or well, being so largely because of its faulty protection against polluting factors or improper location, has been responsible for a persistent, sporadic typhoid fever incidence. An additional impetus to this fundamental policy was realized when to the funds made possible through CWA and FERA the allotment through WPA became effective.

Since November, 1935, WPA community sanitation projects have operated in ninety-three counties and three cities. Sanitary privies totaling 89,776 as well as thirty-two septic tanks have been built under these auspices. Incidentally, but significantly, since the WPA projects got under way, Virginia home owners have spent \$1,172,080 for material involved in this work.

Affecting the health of the shellfish consuming public in the United States, as well as the economic security of Virginia's great shellfish industry, is the research now being conducted at the State Health Department's experimental plant for conditioning shellfish which was constructed at Willoughby in Norfolk through WPA funds. Experimental studies are being conducted to determine the feasibility of cleaning oysters taken from moderately contaminated areas by storage in tanks furnished with chlorinated water. Essential data on the operating costs of such conditioning also is being obtained.

The State Department of Health was given supervision of the WPA nursing program which was inaugurated in December, 1933. Nurses made tuberculosis surveys in counties lacking regular nursing services. Included in the survey was a visit to all homes in which there had been a death from tuber-

culosis since 1922; this, for the purpose of instructing the contacts in their personal care and encouraging them to have a thorough examination by their family physician. Demonstrations of nursing care and education in both personal hygiene and precautionary measures were given. The nurses also assisted the families and physicians in arranging for sanatorium treatment. The WPA nurses also have worked under the close direction of the health officer and nurses in the organized health services.

New Members

Doctors who have become members of the Medical Society of Virginia since the last list was published in the November 1937 issue of the MONTHLY are:

- Dr. Thomas Beath, Richmond
- Dr. William R. Berk, Clinchco
- Dr. Carrington Leonard Booker, Lottsburg
- Dr. Henry Reid Bourne, Danville
- Dr. Earle Godfrey Brown, Arlington (now Mineola, N. Y.)
- Dr. Norborne Page Cocke, Charlottesville
- Dr. Joseph Edwin Cox, Waynesboro
- Dr. Edward Arthur Delarue, Richmond
- Dr. James Nicholas Dudley, Eastville
- Dr. John Newton Dunn, Blackstone
- Dr. Robert Richardson Eason, Buena Vista
- Dr. Homer Earle Ferguson, Richmond
- Dr. Hunter Bernard Frischkorn, Jr., Richmond
- Dr. Cecil Curtis Hatfield, North Holston
- Dr. Joseph Leigh Hundley, Wytheville
- Dr. Zdenka Alda Hurianek, Staunton
- Dr. Edward Valentine Jones, Jr., Arlington
- Dr. Thomas Edward Jones, Charlottesville
- Dr. John Phillip Lynch, Richmond
- Dr. Richard Campbell Manson, Richmond
- Dr. Carl Wise Meador, Richmond
- Dr. John Moyer Meredith, Charlottesville
- Dr. James W. Miller, Pembroke
- Dr. Maxwell Herschel Mund, Martinsville
- Dr. Richard Carroll Neale, Richmond
- Dr. Charles Morris Nelson, Richmond
- Dr. Bernard Lee Parrish, Norfolk
- Dr. Allen William Pepple, Richmond
- Dr. Benjamin Watkins Rawles, Jr., Richmond
- Dr. George Audney Reynolds, Bowling Green
- Dr. Ralph George Rohner, Richmond (now Princeton, Ind.)
- Dr. John Richard Saunders, Madison Heights
- Dr. Lacy Lee Shamburger, Richmond
- Dr. Eldridge Cook Simmons, Roanoke
- Dr. George Tucker Smith, Charlottesville
- Dr. Arnold F. Strauss, Norfolk
- Dr. James William Tankard, Pennington Gap (now Jenkins, Ky.)

Dr. Frederick Nimrod Thompson, Newport News
 Dr. George Nathaniel Thrift, Richmond
 Dr. William Derrick Tillson, Richmond
 Dr. George Douglas Vermilya, Richmond
 Dr. Meyer Richard Whitehill, Norfolk
 Dr. William Hoge Wood, Jr., Charlottesville

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. JAMES B. STONE, 15 Maxwell Road, Richmond.

President-Elect—MRS. HAWES CAMPBELL, Venter.

Corresponding Secretary—MRS. LAWRENCE O. SNEAD, 5307 New Kent Road, Richmond.

Recording Secretary—MRS. JAMES K. HALL, 3011 Seminary Avenue, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, 2502 Hawthorne Avenue, Richmond.

Chairman of Publicity—MRS. FRED J. WAMPLER, 4103 Forest Hill Avenue, Richmond.

National Convention in San Francisco.

The Woman's Auxiliary to the American Medical Association will hold its Annual Meeting in San Francisco June 12 to 17. Those of us who have ever had the privilege of attending a National Convention know what a treat is in store for us. Those who have not had this opportunity, now have the anticipation of a glorious adventure. The prospect of a National Convention and a trip to San Francisco at the same time promises a joy beyond the flights of the imagination. The American Express Travel Tour has planned Physicians' De Luxe Special Trains which will enable the visitors to see the Indian Detour, Grand Canyon, Los Angeles, Riverside and Santa Catalina Island on the trip out. There are two alternate return routes: one via Portland, Seattle, Victoria, Vancouver, Canadian Rockies, Lake Louise and Banff Springs; the other by way of the Yellowstone, Salt Lake City, Royal Gorge, Colorado and Denver. Don't let your husband leave you at home this time. Why not make this trip serve as your summer vacation? You could not plan a more fascinating or delightful one. Plan to attend the meeting with your husband, "see America" together and help make the delegation from the State of Virginia the largest ever to attend a National Convention!

Reports from Auxiliaries.

NORFOLK

The Woman's Auxiliary to the Norfolk County Medical Society, at a meeting March 14, made plans for a card party, dinner and dance to be held at the Norfolk Yacht and Country Club on the afternoon and evening of April 19. The general plan, as discussed at this meeting, is for bridge and tea in the afternoon, the dinner and dance, with a floor show as a special feature, to take place at night. The proceeds realized will be used for the Auxiliary's charity work, one activity part of which is the maintenance of a patient at the Victory Memorial Hospital for the tubercular.

The members paid a tribute, in the form of a moment of silence, to Dr. H. R. Drewry and Dr. William Evans, whose deaths recently occurred.

It was decided to plant a tree as a living memorial to doctors in observance of Doctor's Day.

Mrs. C. J. Devine, president, presided.

(MRS. W. E.) RUBY D. BUTLER,
Chairman, Press and Publicity.

RICHMOND

The Woman's Auxiliary to the Richmond Academy of Medicine met in semi-annual meeting at the Academy Building, Friday, April 8. Mrs. E. Latane Flanagan, president, presided.

On recommendation of the Executive Committee, it was decided to maintain a speakers' bureau this year and a letter will be sent to various women's groups in the city offering speakers for health subjects or programs.

The Executive Committee also recommended that the Auxiliary have a joint program meeting with the Academy of Medicine and this was passed. Details for the program were left in the hands of the program chairman of the two organizations.

Members of the Auxiliary helped in the Tuberculosis Early Diagnosis clinic held in Richmond the week of April 3 to 9.

The Auxiliary was selected as one of the organizations to help in the Control of Cancer drive this month and the members were glad to accept their responsibility in the Woman's Field Army undertaking this work.

The Auxiliary decided to contribute \$5.00 to the Jane Todd Crawford Memorial Fund.

A card party is being planned to be held May 6, proceeds from which will be used for the maintenance of the Auxiliary's local charities, the principal

one being the maintenance of three cots in the Crippled Children's Hospital.

(MRS. F. J.) REBECCA C. WAMPLER,
Chairman, Press and Publicity.

DANVILLE-PITTSYLVANIA

It is with a sense of pride and gratification that the Woman's Auxiliary to the Medical Society of Virginia welcomes the newly organized Auxiliary to the Danville-Pittsylvania County Medical Society. An organized group of physician's wives in this locality brings into reality what has long been the hope of the State Medical Auxiliary. We feel that this group will prove to be an asset not only to its own Medical Society but to the medical profession in the entire State. The Auxiliary was organized March 30, with the following officers: president, Mrs. W. E. Dickerson; vice-president, Mrs. Roy W. Upchurch; secretary, Mrs. Snowden C. Hall; treasurer, Mrs. M. H. Watson.

Truth About Medicine

In addition to the articles previously enumerated, the following have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association: Eli Lilly & Co.

Sulfanilamide Tablets, 7½ grains.

Parke, Davis & Co.

Tablets Sulfanilamide, 7½ grains.

New and Nonofficial Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Mixed Grasses Concentrated Pollen Antigen—Lederle (June Grass, Orchard Grass, Sweet Vernal Grass, Red Top and Timothy, in equal parts).—This product is also marketed in five syringe packages (series D), each syringe containing 3,000 pollen units; and in five syringe packages (series E), each syringe containing 6,000 pollen units. Lederle Laboratories, Inc., Pearl River, N. Y.

Mixed Grasses Pollen Antigen—Lederle (June Grass, Orchard Grass, Sweet Vernal Grass, Red Top and Timothy in equal parts).—This product is also marketed in five syringe packages (series D), each syringe containing 3,000 pollen units; and in five syringe packages (series E), each syringe containing 6,000 pollen units. Lederle Laboratories, Inc., Pearl River, N. Y.

Metrazol Sterile Aqueous Solution, 10 per cent.—A sterile aqueous solution containing metrazol (New and Nonofficial Remedies, 1937, p. 301) 0.1 Gm. per cubic centimeter, for parenteral injection. Bilhuber-Knoll Corporation, Jersey City, N. J.

Ampule Sterile Solution Procaine Hydrochloride—Squibb 10 per cent, 2 cc.—Each cubic centimeter contains procaine hydrochloride—U.S.P. (New and Nonofficial Remedies, 1937, p. 70) 0.1 Gm. in sterile distilled water. E. R. Squibb & Sons, New York. (*J. A. M. A.*, March 12, 1938, p. 815.)

Propaganda for Reform

Mineral Oil in Foods.—The Council on Foods reports that it is well known that liquid petrolatum is not absorbed from the gastro-intestinal tract, and that it yields no calories. Because of these properties, mineral oil is extensively used in the treatment of constipation and, to a lesser extent, in replacing fat in certain foods, chiefly mayonnaise and salad dressings, and a few other products. According to published reports mineral oil interferes with the utilization of vitamin A by experimental animals. Later reports indicated that the ingestion of mineral oil resulted in a considerable loss of vitamin A to the animal organism if the oil was administered with the source of vitamin A but not if the mineral oil were given at some other time of the day. It was also brought out that different results could be expected with different sources of vitamin A. It is apparent that liquid petrolatum would be a poor vehicle for vitamin A and particularly for provitamin A, and its use in this connection could not be countenanced. On the other hand, it appears that in the amounts usually prescribed and under the conditions which should be observed (not to be taken at mealtime), the effect of liquid petrolatum on the absorption of vitamin A of the human diet probably is of little consequence. When incorporated in foods, however, so that the mineral oil is taken at mealtime, it is obvious that there is danger of interference with the absorption of the fat soluble vitamins. The Council on Foods therefore advises strongly against any indiscriminate dosage of mineral oil either alone or incorporated in special foods. (*J. A. M. A.*, Nov. 27, 1937, p. 1814).

Nupercainal—"Ciba" Not Acceptable for N.N.R.—The Council on Pharmacy and Chemistry reports that Nupercaine—Ciba (the hydrochloride) has for some time stood accepted by the Council as a local anesthetic. At the request of the distributor, the Council in 1931 took up consideration of the base, which at that time was marketed in the form of Nupercaine Ointment 1 per cent. On account of the danger from the use of powerful anesthetics by the public the Council objected to the unsupervised use of Nupercaine for sunburn and burns. Subsequently, the firm changed the name of the product to "Nupercainal—Ciba" and circularized the medical profession widely. It was found that the objectionable claims were still maintained. The name does not make clear that the active ingredient is Nupercaine, and further it creates the impression that the preparation is some chemical derivative of Nupercaine instead of being a simple mixture. The firm agreed to abandon the objectionable claims and to revise satisfactorily the trade package. It refused, however, to meet the Council's objection to the name. The Council was therefore compelled to declare the product

unacceptable for N.N.R. (*J. A. M. A.*, February 5, 1938, p. 441.)

Dangers of Sodium Perborate in the Mouth.—The most prominent ingredient used in recent years in dentifrices and mouthwashes for antiseptic purposes is sodium perborate. This has been inspired, no doubt, by its alleged efficiency in combating Vincent's infection. According to the clinical observations recorded in a recent questionnaire study by Isador Hirschfeld, chairman of the Committee on Scientific Investigation of the American Dental Association, perborate may cause (1) painful chemical burns of the oral mucosa (including the gingivae); (2) less painful or entirely painless burns producing a milky-white discoloration, especially of the marginal gingivae; (3) an inflamed condition of the oral mucosa, which predisposes the gingivae and mouth generally to ready abrasion and infection through minimal traumatization, and (4) a form of "hairy tongue" which in some instances causes gagging or irritation of the soft palate and pharynx. Ample examples of the danger of this form of self-medication have now been recorded and adequate proof offered. (*J. A. M. A.*, February 5, 1938, p. 445.)

The Vitamin C Content of Commercially Canned Tomato Juice and Other Fruit Juices as Determined by Chemical Titration.—The Council on Foods reports that many physicians have inquired about the vitamin C content of canned fruit juices. In order to obtain further information on this point, Dr. E. M. Bailey of the Connecticut Agricultural Experimental Station, New Haven, has supplied comparative data on the cevitamic acid content of Council accepted products by chemical titration. This survey covers all canned fruit juices which, at the time of the examination, were privileged to display the seal of the Council on Foods. The figures show that all brands of the canned fruit juices examined contained appreciable quantities of vitamin C. From the figures available, it would appear that canned orange juice is only slightly less potent in vitamin C than the fresh juice from which it is made. Approximately two and one-half volumes of canned tomato juice should be given in order to provide the vitamin C equivalent of one volume of fresh orange juice. If other juices are to be substituted, it is probable that the substitution could be made, other things being equal, on the basis of the vitamin C content. (*J. A. M. A.*, February 26, 1938, p. 650.)

Book Announcements

Library Books Available to Readers.

The following books are among the recent acquisitions of the Library of the Medical College of Virginia, and are available to our readers, the only cost being return postage:

Krusen, F. H.—Physical therapy in arthritis.
Kurtz, C. M.—Orthodiascopy.
Lapage, G.—Nematodes parasitic in animals.

Mann, I.—Developmental abnormalities of the eye.
Markowitz, J.—Textbook of experimental surgery.
Marten, M. E.—The doctor looks at murder.
Means, J. H.—The thyroid and its diseases.
Merritt & Fremont-Smith—The cerebrospinal fluid.
Needham & Green—Perspectives in biochemistry.
N. Y. Academy of Medicine—Milestones in medicine.
Osgood & Ashworth—Atlas of haematology.
Page, I. H.—Chemistry of the brain.
Palmer, J. H.—The development of cardiac enlargement in disease of the heart. A radiological study. Med. Res. Council Spec. Rep. Ser. No. 222.
Physicians of the Mayo Clinic and the Mayo Foundation.
Potter, P. S.—Pediatric treatment.
Rhine, J. B.—New frontiers of the mind.
Stephens, J. W. W.—Blackwater fever.
Todd, M. E.—The thinking body.
Tuft, L.—Clinical allergy.
White, W.—The psychology of dealing with people.

Alcohol. One Man's Meat. By EDWARD A. STRECKER, A.M., M.D., Sc.D., Professor of Psychiatry, School of Medicine, and Graduate School of Medicine University of Pennsylvania; Psychiatrist to the Pennsylvania Hospital and Consultant and Chief of Service, Institute of the Pennsylvania Hospital; etc. And FRANCIS T. CHAMBERS, JR., Associate in Therapy, Institute of the Pennsylvania Hospital. The Macmillan Company. New York. 1938. Octavo of xvi-230 pages. Cloth. Price \$2.50.

Alcoholism is an age-old problem—a problem that has never been and probably never will be entirely solved. It seems a pity that a substance, a drug if you wish, that can give so much pleasure and gaiety to the world is also, barring war, the world's greatest curse. To date, efforts to conquer the baneful effects of alcohol have been dismal failures; the so-called temperance effort with its propaganda, its lurid pictures, and its evangelistic appeals has made but little impression; prohibition seems not only to have increased liquor drinking but to have stimulated racketeering and other disrespect for law; and governmental alcohol control by state boards has placed a powerful and dangerous weapon in the hands of politicians and has made it necessary to buy a pint to get a drink. The Virginia General Assembly has just defeated the proposition to place before the high school students of the state a book, written at its own request, by Drs. Waddill and Haag, two scientific teachers, one from each of the state medical schools, for the proper education of youth in the knowledge of the use and abuse of alcohol. Summing the situation up, Puck, speaking through the magic of Shakespeare's pen, certainly made a wise observation when he said, "What fools these mortals be."

Dr. Strecker, professor of psychiatry of the school of medicine of the University of Pennsylvania, and holder of many other honors, and Mr. Chambers, associate in therapy of the institute of the Pennsylvania Hospital, have bent their minds to the production of a book on alcohol which brings to the attention of the profession and to the interested public a sane, helpful, and scientific view of the cause, effect, and therapy of the abuse of alcohol. Not only this, but the book is exceedingly well written, interesting, and broad minded.

"Alcohol, One Man's Meat," with McDougall's work in 1926, Richard Peabody's "The Common Sense of Drinking," published in 1936, and the "*British Journal of Inebriety*," for the last several years, attack the problem of alcoholism in the light of modern knowledge from almost every angle and should be productive of better understanding and of more constructive therapeutic results.

"Alcohol, One Man's Meat" rolls out upon the printed page the feelings, thoughts, and actions of the alcoholic in such a manner that his whole personality is revealed to our eyes. We learn that there are three general types of alcoholics, the maniac, the inferior, and the childhood dominant and that the physician must never create a defeatist attitude in the patient although the true alcoholic can never learn to drink in a controlled manner. The alcoholic's immature emotional level is to be elevated to better emotional maturity. We learn that legal commitment may at times be necessary, but that it is not a solution or even a desirable measure in the majority of instances. We find that we must avoid, and induce the family to avoid, grim warnings and the pointing out to the patient the debasing, moral aspects of his condition and that the non-emotional approach is far better than the emotional approach. The patient must be taught to play the game of life on a mature basis. The best way to accomplish this is to get the patient accessible by a stay of some weeks or months in a hospital in order to establish free association between the patient and the therapist and also to have the patient follow a daily schedule of living both in the hospital and after he leaves, in which alcohol plays no part and when he leaves to get him to come to the therapist for frequent analysis and advice for a period of at least a year. To attain permanent results the family must be instructed in gaining an attitude of understanding cooperation, and the patient must have a genuine

desire to get well. The main thing for the doctor, the patient, and the family to realize is that alcohol is not the difficulty *per se*, but that it is the outward and visible sign of an inward neurosis or psychoneurosis.

The modern treatment of acute alcoholism or that form with residual wet-brain must, of course, not be neglected. In this reviewer's hands glucose, lumbar puncture drainage, hydrotherapy, and insulin have proved of great value. The proper physical and laboratory examinations, as the book recommends, must be made and abnormal and disease factors treated and, as far as possible, eliminated.

In cases of alcoholism selected for psychologic and psychiatric treatment by the authors, most satisfactory results have been obtained, but the book is not limited to the consideration of these cases. In fact, the great virtue of this book, which has great virtue, is that anyone reading it will take away with him a better, a clearer, and a more useful idea of the alcohol problem in all of its aspects. This book is a good book to purchase, to ponder, and to profit by.

BEVERLEY R. TUCKER, M. D.

MacLeod's Physiology in Modern Medicine. Edited by PHILIP BARD, Professor of Physiology, Johns Hopkins University School of Medicine. With the collaboration of Henry C. Bazett, Professor of Physiology, University of Pennsylvania; George R. Cowgill, Associate Professor of Physiological Chemistry, Yale University School of Medicine; Harry Eagle, Passed Assistant Surgeon, United States Public Health Service and Lecturer in Medicine, Johns Hopkins University School of Medicine; Chalmers L. Gemmill, Associate in Physiology, Johns Hopkins University School of Medicine; Magnus I. Gregersen, Professor of Physiology, College of Physicians and Surgeons, Columbia University; Roy G. Hoskins, Director of Research, Memorial Foundation for Neuro-endocrine Research; J. M. D. Olmsted, Professor of Physiology, University of California; and Carl F. Schmidt, Professor of Pharmacology, University of Pennsylvania. Eighth Edition. St. Louis. The C. V. Mosby Company, 1938. Octavo of xxxv-1051 pages. Cloth. Price, \$8.50.

This is the first edition since MacLeod's death and has been thoroughly rewritten by many outstanding collaborators under the editorship of Doctor Bard. It is now a well-written and modern text, but, unfortunately, as in previous editions, the section on the labyrinth is entirely inadequate. Such disregard of an organ as this naturally makes the reviewer wonder whether or not other equally important matters have been neglected.

R. J. M.

Virginia Medical Monthly

Founded by LONDON B. EDWARDS, M. D., April, 1874
 Owned by MEDICAL SOCIETY OF VIRGINIA since November, 1919
 WYNDHAM B. BLANTON, M. D., *Editor*
 AGNES V. EDWARDS, Richmond, *Business Manager*

PUBLICATION COMMITTEE

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All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Monthly, 1200 East Clay Street, Richmond, Va.

This journal is not responsible for the opinions and statements of its contributors.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Subscription Price: \$2.00 per annum in advance. Single Copies 25c.

VOLUME 65

MAY, 1938

No. 5

Editorial

It's Not What You Say, But How You Say It.

The question at the moment is not whether those who guide the American Medical Association as paid officers, or as those who go to its conventions as delegates, or as those who serve on its important committees as members, reflect the sentiment and will of the great body of the American medical profession. The fact remains that whatever their guidance and whatever their opinions, to the world at large the American Medical Association is a great and respected organization which represents the medical profession of the United States. The question at the moment is not whether we agree with what President Means of the American College of Physicians said the other day in New York. The American Medical Association is still the all inclusive medical force in this country. In the minds of the people it speaks for the American doctor.

It is therefore our duty to see that that voice is representative of the best of our profession, and that when it speaks it speaks clearly, honestly and without fear. The way to see that this is done is to send properly instructed delegates to its annual conventions, delegates who are chosen for some other reason than because they were sent last year, delegates who do not give vent to prejudices and narrow points of view, but delegates who really represent the best thought of the doctors who elected them. No good can ever come from high brows throwing spit balls at the A. M. A. officialdom. No good can ever come

from self constituted groups deluging the lay press with creeds of new professional righteousness. With less politics and polemics a properly constituted House of Delegates can do much.

The Impasse in Fauquier.

The Fauquier Hospital, officially called the Fauquier County Hospital Association, under the management of a lay board, has until now left the professional conduct of the institution entirely in the hands of the attending physicians, and we gather that all of the physicians in good standing in the community have practiced medicine and surgery in the hospital on a parity.

A recent revision of the by-laws under which the hospital operates has changed things. In the words of the doctors these new regulations "restrict them in their practice in the hospital and deprive the people of this county of their right to have free choice of physicians while in the hospital." The doctors further charge that "the lay board is attempting to administer the professional government of the hospital, a subject on which they cannot be well informed."

Twenty-eight doctors, practically all the patrons of the hospital, have refused to serve under the new regulations and a shut down of the hospital threatens. It is hardly likely that a matter of such vital community interest can long remain unsettled.

We are not in possession of all the facts in con-

nection with this matter, and cannot pass judgment upon it as a whole, but there is one important phase of it which we feel called to comment upon. The dispute between the professional staff and the lay board of the hospital seems to us to represent just another example of the danger to medicine that is inherent in the increasing interest of the layman in the whole field of medicine.

With subtle but determined insistence the laymanization of the profession goes on. Within recent years thousands of social workers have sprung into being. Every one of them constitutes a bridge over which outside influence is streaming into the vital centers of an unsuspecting profession, and the delivery into the hands of laymen of many of the strategic positions in medical education and organization represents a danger few of us have been alive to so far. It is bad enough to face a frontal attack such as threatens from the avowed plans and purposes of the New Deal, but to be blind to the lurking danger within the very citadel itself is still worse.

Physicians must be sure in every case that they are not resisting change *per se*; that they are conversant with, and pledged to the latest improvement in whatever field of their endeavor that is at the moment under fire; that they are furnishing leadership without reproach, and that they have the public interest, not their own, at heart—though the two will always prove one in the last analysis. Then they must adamantly resist all lay encroachment.

Examinations.

Examinations—the bugbear of pupil and teacher alike. Who hasn't wished they could be abolished? As thousands of students all over the country face up to them again this month, one is reminded of the fact that no adequate substitute has yet been found for them and that they still represent the only practical measure of scholastic achievement.

Recognizing this, Professor Robert P. Dobie of The University of Buffalo School of Medicine in an excellent article in the *Journal of the Association of American Medical Colleges* for March, after reviewing the types of examination in vogue, pointing out their defects and showing the need for improvement, contrasts the traditional essay type of examination with the newer objective type. His studies, based on questionnaires and on his own experience as a teacher of medicine, bring out a number of facts worth the consideration of all who teach medicine

and of all who are interested in educational problems.

In a survey made by Dr. Dobie of seventy medical schools it was disclosed that only 8 per cent used oral examinations exclusively and that in the vast majority of the others the usual essay type of question was employed. For example: if an examiner were to ask a medical student to give in detail the symptoms, diagnosis and treatment of typhoid fever, he would be employing the essay type of question. Dr. Dobie contends that, among those who are supposed to know, this type is now regarded as inadequate, invalid and unreliable. In support of such strong assertions he quotes the work of Starch at the University of Wisconsin and of Sandiford at the University of Toronto. These investigators found that where sincere attempts were made by eight examiners to grade 128 essay-question-manuscripts, there was no such thing as uniformity in their appraisal. "The point spread between the highest grade assigned each manuscript was more than ten points in more than 60 per cent of instances and more than fifteen points in 34 to 53 per cent of instances." Examiners grading the same lot of manuscripts after several months' lapse of time also showed tremendous variations from their former grades.

Dr. Dobie gives the following example of the newer objective questions: "You are examining the abdomen of a patient who has had acute severe abdominal pain of four hours' duration. You believe there is obliteration of liver dullness on percussion. 1. Of what significance is such an observation? 2. How can such obliteration be established visually? 3. If definitely established, is such a patient more apt to be a male or a female? Why?"

The answers required of this question are short, demanding "a maximum of thinking and a minimum amount of writing." They can be graded quickly, easily, and reliably. Such questions have been shown to be well adapted to the medical curriculum, to test knowledge based on facts, and to demand in their answers interpretation, correlation and judgment.

It is believed that in the case of medical students the lack of correlation between the results of the present aptitude tests and the results of the old essay type of examination is in itself a condemnation of the latter, and that the use of the newer objective

type of examination will give results highly predictable in the results of the aptitude tests.

Something Ought to be Done About it.

Something ought to be done about it,—about this growing, vicious, expensive custom of showing slides at medical meetings. Time was when no one thought of slides. One read one's paper and went home. But then it became fashionable, especially if one could afford it, to show a few slides at the end of one's paper. Now the style of hats has changed even more radically. Everybody must show slides, and the helpless audience is overpowered with a deluge of screen presentations which flicker on and off through the whole meeting.

In these days a paper without slides seems to be considered dull as ditch water—there is no action in the drama—and the success of a presentation, in the author's mind at least, seems to be proportional not only to the number of his slides but to the rapidity with which they can be shown without retarding his flow of language.

This is the worst of all, this habit, which is getting to be quite the rage, of having slide after slide flashed on the screen while the essayist goes merrily on reading a paper timed to the split second to get under the tape before the allotted time is up. How any audience could listen to a paper with its ears, look at a rapid succession of screen flashes with its eyes and register anything but confusion on its brain is passing comprehension.

Of course some slides are useful. Many are abominable. They are illegible because their lettering is too small, because they are congested with too many facts and figures or because they are confused with decimals, fractions, asterisks, etc.

It takes a special intelligence to prepare a slide and a special intelligence to present one. A slide should be so clear that no explanation is necessary, and the speaker should be so anxious to establish its clarity that he will take time to explain it even if it be a simple one. If it is worth his using, it is worth his time in explanation.

Something ought to be done about this slide business if only to save from madness the chronic attenders of medical meetings who still labor under the delusion that such a gathering is a place to learn and who therefore insist on staying through even the longest scientific session.

Report of the Rockefeller Foundation.

When John D. Rockefeller died about a year ago his total philanthropies had amounted to about \$530,000,000, administered largely by certain well-known foundations. Due to Mr. Rockefeller's conviction that it was unwise to maintain funds in trust in perpetuity, the charters of at least two of these foundations authorized in due time the expenditure of principal as well as interest. For this reason the day is fast approaching when the Rockefeller Foundation will no longer exist.

Approximately \$10,000,000 has been expended by this Foundation in the past year. More than half of it has gone to the medical sciences and public health. President Raymond B. Fosdick in a review of the activities of the Foundation for 1937 relates an amazing service to medicine that every doctor should realize.

Pointing out the fact that the Foundation's objective is "the well-being of mankind *throughout the world*," Dr. Fosdick shows that its activities have been projected upon an international plane "without consideration of flags or political doctrines or creeds or sects." For, says he, "in the last analysis knowledge cannot be nationalized. No successful embargoes can be maintained against the export or import of ideas." It makes no difference whether the cure of cancer comes from Berlin or New Haven, we are equally "the beneficiaries of the intellectual property of the race." Animated by this principle the public health work of the Foundation has been spread over seventy-seven different countries and has taken in general three lines of activity: 1. Aid to central and local health departments; 2. Public health education; and 3. The study and control of specific diseases.

Perhaps the most interesting developments have been along the lines reported last year and involve further confirmation of the importance of jungle yellow fever as an entity. This disease has badly upset the epidemiological strategy which has hitherto successfully dealt with yellow fever, for it occurs independently of the *Aedes aegypti*, a vast reservoir of infection existing in the hinterland of both South America and Africa with as yet unknown vectors. Besides establishing the fact of jungle yellow fever the Foundation has developed as the only hope of prevention a method of individual immunization by vaccination with attenuated virus. During 1937 well over 40,000 persons in South America were pro-

tected from the disease by this vaccine. It offers a weapon of defense against what has come to be recognized as an international peril—the spread of yellow fever by air traffic, since immunization of air crews and passengers is now entirely practicable.

In medicine the activities of the Foundation have been largely directed toward the advance of the knowledge of psychiatry. Says Dr. Fosdick, "it cannot yet be said . . . that the development of psychiatry has paralleled the development of other branches of medicine, or that psychiatry has been adopted by the medical profession on the same terms as, for example, surgery." Pointing out that psychiatry is a new science with a paucity of trained personnel, with a leaning to strange cults and theories, powerless to employ "scientific techniques so fruitful in the study of the heart and bacterial invasions," he declares that it has been "shoved off in a corner of speculation and terminologies." The object of the Foundation in expending last year more than one and a quarter million dollars on this specialty was to lift it from a position of inferiority and to make it "a headland of medicine and not an island of speculation."

The influence of the Foundation has been powerfully exerted on experimental biology in the belief that although man is fast mastering his environment he really knows very little about himself. "The biological sciences" which Dr. Fosdick says "are broadly speaking one hundred years behind chemistry and physics," have for this reason received major support from the Foundation.

Alarmed over the disappointingly slow development in the United States in the field of organic chemistry, a field in which England and other European countries have taken the leadership which was once Germany's, the trustees of the Foundation are now giving substantial assistance to stimulate fruitful experimentation.

The Foundation has of course other interests. For example, it has for years supported an anthropological and paleontological program at the Choukoutien Cave in China where the Peking Man, probably the oldest remains of a human being, was recently found. Its concern for the social sciences and the humanities has been displayed in the expenditure of thousands of dollars for grants and scholarships and teaching programs. Its extensive plans for rural education in China, brought to naught for the time at least, is but a further, albeit

unnecessary, example of the advances of peace being delayed by war.

The studied expenditure of his money by officers and trustees chosen for breadth of vision and sound point of view has characterized Mr. Rockefeller's policy at all times. It is an encouragement to those who believe in the practical workings of democracy; and the use of a large proportion of his millions for medicine is proof not only of the wisdom of his agents but of the fundamental nature of the calling in which all physicians are engaged.

An Echo From An Old Crisis.

Students of American medical history are familiar with the attitude and action of the young men of Southern origin who were studying medicine in Philadelphia when the Civil War began. Almost to a man they quit and a few days later a trainload of future medical officers under the leadership of Hunter McGuire disembarked in Richmond. It was a dramatic moment in the Confederate capital.

There were Southern students of medicine in other cities besides Philadelphia. There were a number in New York. How these young men reacted to the agitation that was sweeping the country in 1860 is recorded in a clipping from a New York paper of June 30 of that year which has just come into our hands:

"MEDICAL SECESSIONISTS.

"Meeting of the Southern Students of the Thirteenth Street Medical College—Anti-Secession Resolution Adopted.

"The Southern students of the 13th street medical college met in the lecture room of the college, yesterday noon, to determine upon what action they would take in view of the present secession excitement. Thirty-two students were present, and three or four members of the college faculty.

"Mr. James H. Purdy, of Virginia, was called to the chair, and a committee of three appointed to draw up resolutions, of which Mr. Calhoun Hill, of North Carolina, was made the chairman.

"Professor Raphael, who is a native of Virginia, was then called upon to address the meeting. He did not consider that the election of Lincoln was a sufficient cause for the students to relinquish the superior advantages afforded by New York to medical students. Politics and a medical education should be kept distinct from each other. He thought the present aspect of affairs in the South was not

legitimately the immediate result of any political influence, but a turbulent state which a lot of alarmists had been plotting and planning for a long period, in order to profit by it in some way or other.

"The committee then came in and offered the following resolutions:

WHEREAS: At a recent meeting in this city, of Southern medical students, efforts have been made to induce them forthwith to abandon the college, and return to their homes, for political reasons, in view of the recent presidential election and its possible results; therefore,

RESOLVED: That the class in attendance at the New York Medical College and Charity Hospital, including a number of Southern men who are sojourning in New York in the pursuit of medical education, and for which purpose they have left their homes and entered upon the lectures now in progress here, can see no reason for such rash and abrupt measures as those recommended, until the respective States of the South to which we belong, shall determine upon their course of action; or until we shall receive instruction from home that it is expedient to return.

RESOLVED: That as several of our professors are Southern men by birth, and education, and none of them sympathize with sectional politics either North or South, and that as

no prejudice against the South is entertained by any of our professors or fellow students, we have no just pretext for forfeiting the clinical and other advantages we are enjoying here in cultivating our profession.

RESOLVED: That we remain at our posts, and counsel our Southern brethren in other Northern schools to do so, until duty to our respective states shall summon us away from our studies at the call of patriotism, when we pledge ourselves to obey, as loyal citizens of the Southern States.

"Professor Reese, a native of Maryland, urged the adoption of the resolutions, and expressed the hope that they would recognize no political distinctions until there was something growing out of them that would affect their devotion to science; then there would be a just pretext for throwing up their studies.

"After spirited remarks by Professors Gardiner and Budd, both of New York, the resolutions were put and carried unanimously. Messrs. Hill and McElwer also spoke in favor of remaining here until the states from which they hailed (North Carolina and Missouri, respectively) actually seceded.

"The meeting then adjourned."

Proceedings of Societies

The Elizabeth City County Medical Society

And the Dixie Hospital Staff are conducting several clinics at the Dixie Hospital: Orthopedic or Crippled Children's Clinic, sponsored by the Hampton Kiwanis Club, and the Prenatal and Maternal Welfare (Birth Control) Clinic, and Syphilis Clinic. The latter clinic has been in operation since December, 1936, and is held once a week with an average attendance of about thirty.

Dr. Willard P. Smith, Hampton, is president of this Society and Dr. Robert H. Wright, Jr., Phoebus, secretary.

The Patrick-Henry Medical Society,

At its annual meeting elected the following officers who are serving for 1938: President, Dr. D. L. Fleshman, Bassett; vice-president, Dr. J. T. Shelburne, Critz; and secretary-treasurer, Dr. F. B. Teague, Martinsville. Meetings are held quarterly.

Williamsburg-James City County Medical Society.

At a recent meeting of the James City-New Kent Medical Society, a motion was made and seconded

that the name of the Society be changed to the Williamsburg-James City County Medical Society, and that a new charter be granted under this name. At this meeting, the officers elected were: President, Dr. E. B. Kilby of Toana; vice-president, Dr. J. R. Tucker of Williamsburg; and secretary-treasurer, Dr. I. S. Zfass of Williamsburg.

It was decided that the April meeting was to be at Williamsburg Inn Annex on the seventh of that month and was to be "Ladies' night".

I. S. ZFASS,
Secretary-Treasurer.

The Nansemond County Medical Society,

At its meeting in Suffolk on March 25th, re-elected Dr. E. C. Joyner and Dr. C. C. Hedges, both of Suffolk, as president and secretary-treasurer, respectively, for the coming year. On this occasion, Dr. Oscar Swineford, assistant professor of medicine at the University of Virginia School of Medicine, was the guest speaker, his subject being "Fibrositis and Arthritis".

The Orange County Medical Society

Held its regular quarterly meeting on April 1, with Dr. Lewis Holladay, Orange, in charge of the program. Following his paper on some of his early experiences as a rural physician, refreshments were served by Mrs. Holladay.

The next meeting will be held on July 1, with Dr. O. N. Shelton as leader.

The Northampton County Medical Society

Had its regular quarterly meeting on April 6, at which time the members took part in a round-table discussion under the guidance of suggestions from Dr. John R. Hamilton of Nassawadox, on the subject of "Congestive Heart Failure".

This society and the Accomack County Medical Society are making definite plans for a series of lectures in Internal Medicine to be held on "the Shore" in the near future.

W. C. HENDERSON,
Secretary.

The Fourth District Medical Society

Held its regular meeting on April 19, in Victoria, under the presidency of Dr. J. L. Hamner, Mannboro, following which the members were entertained at dinner at the home of Dr. H. E. Whaley.

The following program was presented: Lumbo-Sacral Defects as a Cause of Low Back and Vague Abdominal Pain by Dr. Allen Barker, Petersburg; The Cure of Direct Inguinal Hernia by Dr. Charles R. Robins, Richmond; A New Method of Treating Salpingitis by Dr. Philip Jacobson, Petersburg; The Use of Cod Liver Oil (locally) in the Treatment of an Infected Burn by Dr. H. B. Showalter, Kenbridge; The Use of Vegetable Milks in Infant Feeding by Dr. W. Ambrose McGee, Richmond; Experiences and Impressions in the Use of Some of the Newer Modalities in Medical Practice by Dr. H. E.

Whaley, Victoria; and Cataract Due to Dinitroresol by Dr. C. S. Dodd, Petersburg.

Lynchburg Academy of Medicine.

The regular meeting of the Academy was held in the Elks' Club, April 4, with the President, Dr. Elisha Barksdale, presiding.

Dr. John Walker, through his long distinguished and faithful service, was unanimously voted to Honorary Membership in the Academy.

Drs. Edwin Harper and E. S. Groseclose presented instructive papers on Infant Mortality from a Pediatric and from a Maternal Standpoint, respectively.

C. E. KEEFER, M. D.,
Sec'y-Treas.

Roanoke Academy of Medicine.

At the regular meeting of the Academy on April 4th, the following scientific program was presented: Infection, Immunity and Specific Treatment of Lobar Pneumonia by Dr. John A. Kolmer; and Diverticulum of the Hypopharynx by Dr. Chevalier Jackson. Both speakers are from Temple University, Philadelphia.

The Virginia Peninsula Academy of Medicine

Held its monthly meeting on April 18th, at the Chamberlin Golf Club in Hampton. Dr. Julian M. Ruffin, of Duke University, spoke on the Diagnosis and Treatment of Conditions Resulting in Blood Diarrhea, which was illustrated with slides in color and charts. The meeting was followed by a chicken dinner.

An association to provide hospitalization for residents of the Peninsula has recently completed its organization with all the civilian hospitals participating. Much credit is due Dr. Harold W. Potter, of Newport News, for his efforts in behalf of this organization.

News Notes

Danville Meeting of Medical Society of Virginia.

Danville doctors are active in their preparations for the sixty-ninth annual session of the Society to meet in their city on October 4, 5 and 6. Scientific and commercial exhibits are to be a feature of the meeting as usual, and some spaces have already been engaged. Individual members or groups who

desire to have scientific exhibits are asked to communicate with the state or local chairman of scientific exhibits promptly.

As many members wish to make reservations in advance, the local committee has secured the following rates per diem:

Hotel Danville: Every room with bath tub or shower, or combination tub and shower, as preferred.

Single rooms \$2.00 to \$4.00; double rooms \$4.00 to \$7.00.

Hotel Burton: Single rooms without bath \$1.50 to \$2.00 and with bath \$2.00 to \$3.00; double rooms without bath \$2.50 to \$3.00 and with bath \$3.50 to \$4.00.

Leeland Hotel: Single rooms without bath \$1.50 to \$2.50 and with bath \$2.00 to \$2.50; double rooms without bath \$2.50 to \$3.00 and with bath \$3.00 to \$3.50.

In making plans for your summer vacation, be sure to reserve time for attending this meeting in Danville.

American Medical Association.

Official call has been issued for the eighty-ninth annual session of the Association in San Francisco, Calif., June 13 to 17, under the presidency of Dr. J. H. J. Upham of Columbus, Ohio. The House of Delegates will, as usual, convene on the first day, and the Scientific Assembly will open with the General Meeting on Tuesday evening at 8:30 p. m. In addition to the natural attractions of a visit to California and the "Golden West", much of social interest will add to the pleasure of those attending.

"See America" en route to the Convention in San Francisco.

Officials of our Society were pleased to learn from the American Express Company, Official Transportation Agents for the Convention tours, that they have already received an excellent response from physicians and their families, which indicates that the San Francisco Convention will be a great success.

This is the first time that the physicians have been offered the facilities of de luxe special trains visiting the scenic attractions of the west, at a very nominal all-expense cost from your home city. The route to San Francisco and the Convention traverses a route that contains many wonders, such as the Indian Pueblo District with its remnants of an ancient civilization long vanished from this continent; the Grand Canyon with its grandeur of scenic attractions; Southern California, with its glowing, sun-filled cities and orange empires, Spanish Missions, Catalina Island and the Pacific rolling up to the edge of white sands.

Returning, there is a choice of two routes. One includes the charming cities of America's Northwest: Portland, Seattle, Victoria, Vancouver and the ma-

jestic Canadian Rockies and its resorts. Route Two winds through Yellowstone National Park and its world-famous geyser region, through Salt Lake City, and the scenic beauties of the Royal Gorge, Colorado Springs and the mile-high city, Denver.

These special train tours are restricted to physicians, their friends and families, and have been made possible through the united interest and support of twenty-five state medical societies which makes it possible to offer the tours on an economical, all-expense basis. This is an ideal opportunity to enjoy a wonderful vacation with your family and in the company of friends and colleagues in this and other state societies.

Members of the Medical Society of Virginia who intend to participate in the convention tour should apply at an early date to the American Express Travel Service, 1414 F. Street, Northwest, Washington, D. C., for tour reservation, so as to secure the type of Pullman accommodations desired.

To Represent State Society at Conference.

Dr. G. F. Simpson, president, has appointed Dr. P. St. L. Moncure of Norfolk to represent the Medical Society of Virginia at the Fourth Annual Virginia State-Wide Safety Conference to be held at Monticello Hotel in Norfolk, on June 3 and 4. Our representative requests us to announce that all members of our Society interested in the work of this Conference are invited to attend.

News of Local Health Officers.

Dr. Linwood Farley, assistant health officer in the Valley Health District, has been appointed Health Officer *pro tem* of the Hanover County Health Department.

Dr. William Y. Garrett has been appointed Health Officer of the Prince William County Health Department. Dr. E. M. Holmes who has temporarily directed the activities there will now give his entire time to Fairfax County.

Medical College of Virginia News.

The climax of the Centennial celebration of the College will be at Commencement, June 7, with a general homecoming of alumni of all four schools.

At ten-thirty o'clock on the morning of June 7, the Centennial program proper is scheduled. There will be greetings from the State of Virginia, City of Richmond, The Founding College, Hampden-Sidney, Virginia State Colleges and Universities, Virginia Non-State Colleges and Universities, the son

of the founder of the University College of Medicine, the student body, the alumni, and from science. The principal address will be delivered by Dr. Henry A. Christian, Hersey Professor of the Theory and Practice of Physic, Harvard Medical School.

At eight o'clock on the evening of June 7, the Commencement exercises will be held, with Dr. J. Rion McKissick, President of the University of South Carolina, as the principal speaker. About one hundred forty students will be graduated from the four schools of the institution.

Colleges and universities throughout the nation will be invited to send representatives for the Centennial program.

Dr. Lewis E. Jarrett, Director of the Hospital Division, has been elected to membership in the House of Delegates of the American Hospital Association.

News from University of Virginia, Department of Medicine.

At the meeting of the University of Virginia Medical Society on March 7, Dr. J. C. Flippin spoke on "Dr. Walter Reed" and Dr. G. M. Lawson discussed "Virus Infections of the Central Nervous System."

On March 22, Dr. Marion B. Sulzberger of New York City addressed the University of Virginia Medical Society on the subject Allergy to Simple Chemicals: Some Practical, Theoretical and Experimental Aspects.

At the meeting of the University of Virginia Medical Society on March 28, Dr. J. L. Bollman of the Mayo Clinic spoke on Physiology of the Impaired Liver.

Dr. Alfred Chanutin presented a paper on Water Balance in Nephritic Animals before the Federation of American Societies for Experimental Biology in Baltimore on April 2.

Drs. J. Edwin Wood and James R. Cash presented a paper on Hypertension and Obesity—Experimental and Clinical Observations before the meeting of the American College of Physicians in New York on April 4 to 8.

At the meeting of the American Association of Anatomists in Pittsburgh on April 14 to 16, Dr. H. E. Jordan presented a paper on Smooth Muscle Simulacra of Discs of Cross-Straited Muscle; Dr.

C. C. Speidel on Direct Observations of Minute Structural Changes in Fibers of Cardiac Muscle During Irritation and Injury, and the Significance of the Intercalated Discs of the Heart; and Dr. J. E. Kindred on A Quantitative Histologic Study of the Lymphoid Organs of Twenty-Day and Thirty-Day Old Albino Rats.

At the meeting of the Southwestern Virginia Medical Society in Abingdon, Virginia on April 14, Dr. H. B. Mulholland spoke on Sulfanilamide, Pneumonia Serum and Protamine Insulin; Dr. R. V. Funsten spoke on the subject of Some Suggestions in Fracture Treatment.

Jefferson Medical College of Philadelphia News.

The William Potter Memorial Lecture was delivered by Dr. William Boyd, Professor of Pathology and Bacteriology, University of Toronto, on April 18. His subject was "Growth, Normal and Abnormal."

News Notes from Duke University School of Medicine.

The Durham-Orange County Medical Society held its regular monthly meeting at Duke Hospital April 8, at which papers were presented by Dr. W. B. McCutcheon and Dr. J. W. Beard.

On April 12, Dr. Hugh H. Trout, Surgeon-in-Chief of the Jefferson Hospital, Roanoke, Va., gave a clinic, showing motion pictures of an operation for radical mastectomy.

On April 13, Vilhjalmur Stefannson, Arctic explorer, gave a lecture on Diet in Primitive People.

On April 14, Dr. Harold W. Brown, Professor of Preventive Medicine and Public Health at the University of North Carolina, lectured on Hookworm.

Dr. Lomax Gwathmey,

Norfolk, was recently in an automobile accident in which he suffered a fractured patella and multiple bruises. While somewhat incapacitated because of the knee injury, his condition was not regarded as serious.

Dr. J. Shelton Horsley,

Richmond, on April 6th, read a paper on "The Symptoms, Diagnosis and Treatment of Cancer of the Stomach" before the Lancaster County Medical Society at Lancaster, Pa. On April 18th, he gave two papers for the Arkansas Medical Society at their

annual meeting at Texarkana. One of these papers was on cancer of the stomach read before a scientific session, and the other was a lecture on cancer before the public meeting of the Society.

The Virginia Society of Oto-Laryngology and Ophthalmology

Will hold its annual meeting at the Williamsburg Inn, Williamsburg, Saturday, May 21st. All Eye, Ear, Nose and Throat men of Virginia are invited to attend. Dr. M. H. Hood of Portsmouth is president and Dr. Charles T. St. Clair of Bluefield, W. Va., secretary.

Interesting Meeting.

The Virginia Academy of Science will hold its sessions this year, Friday and Saturday, May 6th and 7th, at the Virginia Polytechnic Institute in Blacksburg.

Dr. H. B. Haag of the Medical College of Virginia is Chairman of the Medical Section, and Dr. I. D. Wilson of the Virginia Polytechnic Institute is Secretary. The program of this section consists of twenty-two papers, some of them of immediate clinical interest, and some of them on scientific investigations that may later develop into matters of clinical importance. All those interested are cordially invited to attend.

Married.

Dr. Richard B. Nicholls of Norfolk and Dr. H. Aurelia Gill of Richmond, recently associate physician at the Woman's College of the University of North Carolina, in Richmond, April 1.

Dr. Richard Campbell Manson and Miss Mary Kathryn Taylor, both of Richmond, April 23.

Dr. James Murray Ellzey, Jr., Chestnut Hill, Pa., and Miss Florence E. Haines, Frankford, Pa., April 8. Dr. Ellzey is an alumnus of the Medical College of Virginia, having been a member of the class of '31.

Dr. William Bernard Carpenter of Lovettsville and Miss Eilene Ward of Richmond, April 16.

Dr. Joseph Edward Gladstone of Exmore and Miss Doretta Anne Roberts of Cape Charles, April 9.

The Virginia Society of Obstetricians and Gynecologists

Held its Spring Travel Clinic in Philadelphia, April 5 and 6, under the presidency of Dr. F. O. Plunkett of Lynchburg. Dr. S. E. Oglesby of Lynchburg was acting secretary for Dr. E. S. Groseclose. In addition to these, the following doctors at-

tended and reported an excellent and instructive time: Drs. Joseph Bear, William M. Bickers, A. L. Carson, Jr., J. M. Habel, Jr., M. P. Rucker, L. L. Shamburger, H. C. Spalding and J. M. Whitfield from Richmond; C. J. Andrews from Norfolk; T. J. Williams from Charlottesville; George S. Hurt from Roanoke, L. M. Allen from Winchester; and Philip Brown from Asheville, N. C.

Wet and dry clinics were held at the University of Pennsylvania Hospital during the morning of the 5th by Drs. Charles C. Norris and Carl E. Bachman, and in the afternoon at Jefferson Hospital by Dr. Norris W. Vaux. On the 6th, the clinics were at the Woman's Clinic of the Pennsylvania Hospital (Philadelphia Lying-In Hospital), under the direction of Drs. Clifford B. Lull and Robt. A. Kimbrough, Jr.

Dr. Francis W. Upshur,

Richmond, has been appointed Venereal Disease Control officer for Richmond. This is a new work undertaken by the City, with a view to uncovering and eradicating gonorrhea and syphilis in this community.

Virginia Tuberculosis Association.

The annual meeting of this Association was held in Richmond, March 24th. Dr. Paul H. Ringer, Asheville, N. C., president of the Southern Tuberculosis Conference, and Dr. I. C. Riffin, Richmond, State Health Commissioner, were the principal speakers.

Mr. J. Vaughan Gary, Richmond, was elected president, and Dr. Roy K. Flannagan, secretary. Among those on the executive committee are Dr. Fletcher J. Wright, Petersburg; Drs. Roy K. Flannagan and Dean Cole, Richmond; and Dr. C. Lydon Harrell, Norfolk. New directors include Dr. F. J. Clements, Stony Creek, and Dr. E. C. Shull, Herndon; those re-elected are Drs. J. B. Nicholls; Catawba Sanatorium; Fletcher J. Wright; P. M. Chichester; Dean Cole, and Roy K. Flannagan.

Portrait of Dr. Flippin Presented University of Virginia.

A portrait in oils of Dr. James Carroll Flippin, Dean of the Medical School of the University of Virginia, was presented to that School in April. The portrait is the work of the distinguished American artist, Alpheus Cole. It was presented by James B. Black, Jr., student president of the Department of Medicine, and was accepted by Dr. John Lloyd

Newcomb, president of the University. Dr. Harvey E. Jordan, assistant dean of the Department of Medicine, presided at the exercises.

Early T. B. Diagnosis Campaign.

Dr. T. Dewey Davis, chairman of the Medical Committee of the Richmond Tuberculosis Association, appointed Dr. Emily Gardner as general chairman for the Early Diagnosis of Tuberculosis Campaign recently held in Richmond. After assuming control of this work, Dr. Gardner appointed Dr. A. S. Hurt, Jr., as clinic chairman.

Dr. William M. Moir,

Recently Service Fellow in Pharmacology at the University of Virginia, Department of Medicine, is now in Indianapolis, Ind.

"Eyes on the Future"

Is the title of the twenty-third annual report of the National Society for the Prevention of Blindness. In 1937, the Society's efforts to prevent loss of sight from disease were given added impetus by the tremendous progress of the campaign to stamp out syphilis, one of the major causes of blindness. One hundred and twenty students attended the summer courses for training of sight-saving class teachers, and forty-four new sight-saving classes were established during the year, making a total of 558. Special activity is noted in regard to the annual campaign for a "safe and sane" Fourth of July and the work of the Committee on Statistics of the Blind in securing data on the causes of blindness. This was the fifth consecutive year in which members and donors contributed more than they did the preceding year.

American Board of Obstetrics and Gynecology.

The oral, clinical, and pathological examinations for Group A and Group B applicants will be held in San Francisco, California, on Monday and Tuesday, June 13 and 14.

An informal dinner for the Diplomates of this Board, their wives and others interested in the work, will be held at the Palace Hotel, San Francisco, on Wednesday evening, June 15, at seven o'clock. Dr. William D. Cutter, Secretary of the Council on Medical Education and Hospitals of the American Medical Association, will address the group, and the successful candidates of the preceding two days' examinations will be introduced in person. Tickets, at \$2.25 each, may be obtained in advance from

Dr. Joseph L. Baer, 104 S. Michigan Avenue, Chicago, Illinois, or at the door. Reservations should be made in advance if possible.

Application blanks and booklets of information may be obtained from Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

Dr. and Mrs. A. D. Parsons

And daughter, Alyce France, of Richlands, have returned to their home after spending sometime in Umatilla and St. Petersburg, Fla.

Dr. Earle G. Brown,

Formerly Health Officer of Arlington County, has accepted the position of County Health Commissioner of Nassau County, N. Y. He is located in Mineola, N. Y.

Dr. G. Chambers Woodson,

Richmond, announces the removal of his office to the Grace-American Building, at the corner of Fourth and Grace Streets.

The Virginia Hospital Association

Held its annual meeting at Columbia, S. C., the middle of April, in conjunction with the associations of North and South Carolina. At this time it was decided to hold the 1939 Tri-State Conference at Old Point Comfort, Va. Officers of the Virginia Unit elected at this time are: President, Mr. O. K. Fike, of Grace Hospital, Richmond; vice-president, Dr. J. M. Shackelford, of Martinsville; and secretary-treasurer, Mr. M. Haskins Coleman, director of the Hospital Service Association, of Richmond.

Report of St. Elizabeth's Hospital.

The Annual Report of St. Elizabeth's Hospital, Richmond, for 1937 has just been published. This covers the work of the hospital in its twenty-sixth year and the seventeenth year of its administration as a general surgical and medical hospital. It includes all patients admitted to the hospital, but does not include those operated upon or treated elsewhere by members of the Staff. In the first few pages are listed the publications by members of the Staff, and statistics of the School of Nursing and Out-Patient Department. There follows a record of the diagnosis and operation on all patients admitted to the hospital. The report also contains a critical resumé of all deaths occurring in the hospital during 1937,—forty-six deaths with thirty-one necropsies.

There was about the same number of appendix

and hernia cases, with an increase in the number of gastro-intestinal and malignant cases. There has also been an increase in the number of medical and urological patients.

In 1937 there were 1,512 admissions, compared with 1,417 in 1936. There were 156 appendectomies in 1937 with no deaths during the year, making a series of 795 operations for appendicitis since January 1, 1931, with five deaths, a percentage of 0.6 per cent.

The number of operations on the stomach and for cancer of the breast has increased. There were twenty-two partial gastrectomies without a death in 1937, compared with thirteen in 1936; twenty-five operations for cancer of the breast without a death in 1937, compared with eighteen in 1936.

The greatest increase was in the Out-Patient Department, with 3,782 examinations in 1937, and only 1,893 in 1936.

Dr. Harry Golston,

Recently of Roanoke, entered the United States Public Health Service on March 1, as a Passed Assistant Surgeon, and is now stationed at Washington, D. C., on the U. S. Compensation Commission.

Gill Memorial Annual Spring Graduate Course.

The twelfth annual Spring Graduate Course of the Gill Memorial Eye, Ear and Throat Hospital in Roanoke, last month, was attended by sixty-five doctors from nineteen states and Canada. The following were the guest lecturers: Drs. Walter E. Dandy, Baltimore; John A. Kolmer, Philadelphia; Chevalier L. Jackson, Philadelphia; I. Friesner, New York; John J. Shea, Memphis; Claire L. Straith, Detroit; Edmund B. Spaeth, Philadelphia; Bernard M. Samuels, New York; Daniel B. Kirby, New York; LeGrand H. Hardy, New York; Grady Clay, Atlanta; and Mr. Bernard M. Samuels, New York.

Doctors Head A.P.V.A. Branch.

Dr. E. Pendleton Tompkins, Lexington, was re-elected president of the Rockbridge County Chapter of the Association for the Preservation of Virginia Antiquities, and Dr. Francis Lee Thurman, Buena Vista, was elected vice-president, at the annual meeting of this Branch held recently.

Dr. W. R. Bond,

Formerly Professor of Physiology at the Medical College of Virginia, and for the past three years Director of Rare Chemicals, Inc., New York, has re-

turned to Richmond where he is affiliated with the Charles C. Haskell and Company, Inc.

The American Association of Industrial Physicians and Surgeons

Will hold its twenty-third annual meeting, in conjunction with the second annual Midwest Conference on Occupational Diseases, at the Palmer House in Chicago, June 6-9, under the presidency of Dr. Royd R. Sayers, Washington, D. C.

An open invitation has been extended all doctors to attend these sessions because of the importance of broadening the efforts of industrial medicine.

Accidents in 1937.

The National Safety Council has recently announced the roll of accidental deaths and injuries for 1937 as dead 106,000, permanently injured 375,000, and temporarily injured 9,400,000. The estimated cost of this was \$3,700,000,000. Although the deaths from accidents of all causes decreased 4 per cent from 1936, traffic accidents increased 4 per cent. Full details on accidents in 1937 may be obtained from the *Journal of the American Medical Association* for March 12.

Dr. James William Tankard,

Recently connected with the Lee General Hospital at Pennington Gap, has located at Jenkins, Ky., where he is on the staff of the Jenkins Hospital.

Harvard Club of Virginia.

At the annual meeting of the Club early in April, Dr. Thomas F. Wheeldon, of Richmond, was elected president for the ensuing year and Dr. Lee E. Sutton, Richmond, and Dr. Hyman Cantor, Petersburg, were named vice-presidents.

Dr. W. C. Caudill,

Pearisburg, has been appointed a member of the Commission on Redistricting the General Assembly—one of eight legislative commissions announced by the Speaker of the Virginia House of Delegates.

Dr. Deryl Hart,

Professor of Surgery at Duke University Medical School, Durham, N. C., was the guest speaker before the Richmond Academy of Medicine at its meeting on April 12. His subject was "Sterilization of the Air in the Operating Room with Bacteriacidal Radiant Energy".

Dr. Dudley C. Smith,

Of the University of Virginia Hospital, was the

principal speaker at the meeting of the Mothers' Club of Charlottesville, early in April.

Alpha Epsilon Delta Convention.

The Fifth Biennial Convention of the Alpha Epsilon Delta Honorary Premedical Fraternity was held at Chapel Hill, N. C., March 24-26, the Beta Chapter, at the university of North Carolina, acting as host to eighty-five visiting members and delegates from twenty-one chapters in fourteen states.

One of the most important reports to the convention was the success reported by the various chapters for their social hygiene programs among the college students, many having well conducted programs on mental and social hygiene for the students. Two of the high points of the convention were the illustrated lecture by Dr. Addison G. Brenizer, of Charlotte, N. C., on "Surgical Anatomy of the Thyroid Gland and Thyroidectomy", and the address by Dean Wm. deB. MacNider, of the University of North Carolina Medical School, on "The Biologically-Minded Physician", at the convention banquet Saturday evening.

Dr. Charles F. Poe, professor of Chemistry, University of Colorado, was elected Grand President of the Grand Staff.

American Association for Thoracic Surgery.

At the meeting of this Association in Atlanta, Ga., early in April, San Francisco was selected as next year's meeting place, and Dr. Harold Brunn of that city was named president. Dr. I. A. Bigger of Richmond was elected treasurer, and Dr. Richard Meade, former Virginian now of Philadelphia, was chosen secretary.

Dr. John O. Hurt,

Who has been engaged in general practice at Bent Mountain, Va., for the past year, has returned to Staunton, where he has his former position on the medical staff of the Western State Hospital.

Dr. D. Hunter Marrow

Is again at his home in Boydton, Va., after his usual winter vacation at Daytona Beach, Fla.

Doctors Head Davidson Alumni in Richmond.

Dr. Porter P. Vinson was elected president and Dr. Richard C. Neale vice-president of the local chapter of the Davidson College Alumni Association at its annual meeting in Richmond, the middle of April.

National Health Council.

The election of Ira V. Hiscock, Professor of Public Health in the Yale University School of Medicine, as President of the National Health Council for 1938 was announced in March. Professor Hiscock succeeds Dr. Donald B. Armstrong, Vice-President of the Metropolitan Life Insurance Company, who becomes a member of the Council's Board of Directors.

Research workers from all parts of the United States used the facilities of the National Health Council Library during the past year. In 1937, the services of the library were made available more than 1,500 times to others than staff members of the seventeen organizations in the Council.

The library now contains more than 6,000 volumes and 30,000 pamphlets dealing with public health, sanitation, hygiene, and related subjects, and more than 500 medical and educational periodicals are received regularly from all parts of the world. As an aid to public libraries in the selection of books on health subjects, a list of approximately 300 health books of interest to the general public is being compiled at present.

The American Neisserian Medical Society

Will hold its fourth annual session in Washington, on May 16 and 17, under the presidency of Dr. C. C. Norris, of Philadelphia. The meeting will open with a symposium on sulfanilamide, with Dr. Perrin H. Long, of Johns Hopkins Hospital, as the principal speaker. The business meeting, with election of officers, will be held on the second day, following which a number of papers will be presented.

Further information may be obtained from the secretary, Dr. Oscar F. Cox, 113 Bay State Road, Boston, Mass.

The Eastern Surgical Society

Held its annual meeting in Richmond, April 22-23, under the presidency of Dr. I. A. Bigger, Richmond. Dr. John Bowler, Hanover, N. H., was elected president, and Dr. Maxwell Harbin, Cleveland, continues as secretary-treasurer. The 1939 meeting will be held in Hanover, N. H.

The American Association on Mental Deficiency.

Under the presidency of Dr. Harry C. Storrs, Thiells, N. Y., held its annual meeting in Rich-

mond, April 20-23. Officers elected were: President, Dr. Neil A. Dayton, of the Massachusetts State Department of Mental Diseases, Boston; vice-president, Dr. Fred Kuhlmann, St. Paul, Minn.; and secretary-treasurer, Dr. E. Arthur Whitney (re-elected), Elwyn, Pa.

Home for Convalescences.

A home for the care and treatment of chronic aged and convalescences has been opened at Arrington, Nelson County, Virginia, under the care of Dr. and Mrs. Fred M. Horsley. Information upon request. (*Adv.*)

Medical Research.

Physician having access to a complete Medical Library offers his services to authors and others in locating references, or for medical research of any kind. Reasonable fee. Address "No. 38", care this Journal. (*Adv.*)

Obituary Record

Dr. Stark Armistead Sutton,

Prominent physician of Norfolk, died April 1st, having been ill but a short time with pneumonia. He was sixty-five years of age and a native of North Carolina, though he had been a resident of Norfolk for the past fifty-five years. Dr. Sutton received his medical degree from the University of Maryland in 1894. He was at one time Norfolk health officer, and was active in civic, social and business affairs, as well as being a Mason. Dr. Sutton was a member of the Medical Society of Virginia. His wife and two sons survive him.

The following resolutions were adopted by the Norfolk County Medical Society:

Dr. Stark Armistead Sutton was born in North Carolina, but, early in life, with his parents, he removed to Norfolk, where the remainder of his all too short and most useful life was passed.

After his graduation from the medical school of the University of Maryland, he began in Norfolk that professional career the record of which is written in the hearts of hundreds of those whose lives are happier because of his medical skill, and patient and sympathetic understanding of those numerous disturbing problems of life about which every doctor is consulted.

Dr. Sutton had an unusually quiet and unassuming demeanor, and yet he possessed a keen and refreshing sense of humor that made him a delightful companion, and

helped him to face with equanimity many of the very trying situations incident to a busy doctor's life.

In recent years, because of impaired health, his activities were moderately restricted, and yet his interest in modern medicine never waned. He did not allow himself to fall behind its progressive course.

At 11:40 o'clock on the night of April 1st, after a very short illness from pneumonia, an illness so sudden and brief that many of his intimate friends were unaware of it, he died, and the whole community in which he lived and labored was greatly shocked by the catastrophe.

Already he is greatly missed and the Norfolk County Medical Society, in which for so long he was very active, mourns his passing.

It is hereby resolved that this brief memorial shall be incorporated in the records of the Society, and a copy sent to Dr. Sutton's family and one to the VIRGINIA MEDICAL MONTHLY.

JULIAN L. RAWLS,
P. ST. L. MONCURE,
N. G. WILSON,
Chairman.

Dr. Joseph Bishop Wolfe,

Coeburn, Va., died April 6th. He was a native of Wolfe County, Ky., and sixty-nine years of age. He graduated from the Louisville Medical College in 1891, and began his practice in Coeburn where he founded the Coeburn Hospital in 1914. Dr. Wolfe had been a member of the Medical Society of Virginia for thirty-six years.

'Dr. Paul Eustace Redd,

Well-known Richmond physician, died March 27th, after having been in ill health for several years. He was sixty-four years of age and a graduate of the Medical College of Virginia in 1895. Dr. Redd had practiced in Richmond for more than thirty-five years. He was for a number of years a member of the Medical Society of Virginia. His wife and a daughter survive him.

Dr. Louis Burgin McBrayer,

Prominent physician of Southern Pines, N. C., died April 1st, having been ill for several months. He was sixty-eight years of age. Dr. McBrayer held office in many organizations in North Carolina, among them being secretary-treasurer of the Medical Society of the State of North Carolina for twenty-one years, and also its president; president of the State Board of Medical Examiners; managing director of the State Tuberculosis Association; superintendent of the State Sanatorium for the Treatment of Tuberculosis; and president of the Southern Conference on Tuberculosis.

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VIRGINIA MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

69th Annual Meeting, Medical Society of Virginia, Danville, October 4-6, 1938

Vol. 65, No. 6.
WHOLE No. 1032.

RICHMOND, VA., JUNE, 1938

\$2.00 A YEAR
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VACATIONS are too often a vacation from protective foods. For optimum benefits a vacation should furnish optimum nutrition as well as relaxation, yet actually this is the time when many persons go on a spree of refined carbohydrates. Pablum is a food that "goes good" on camping trips and at the same time supplies an abundance of calcium, phosphorus, iron, and vitamins B and G. It can be prepared in a minute, *without cooking*, as a breakfast dish or used as a flour to increase the mineral and vitamin values of staple recipes. Packed dry, Pablum is light to carry, requires no refrigeration. Here are some delicious, easy-to-fix Pablum dishes for vacation meals:



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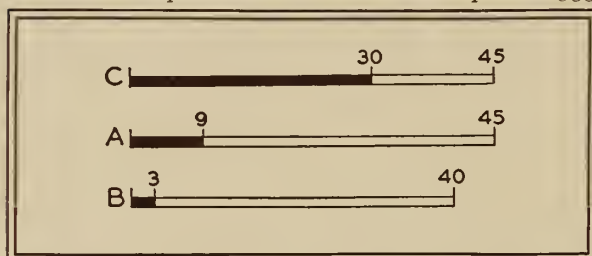


Chart shown at left covers a 6-week period following the first prophylactic dose. One hundred and thirty men were divided into three groups: A, B, C. All intermingled in their work in clearing ivy-infested areas.

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The shaded areas represent the number of exposed men affected with ivy dermatitis in the 6-week period.

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Official Publication of the Medical Society of Virginia

Vol. 65, No. 6.
WHOLE No. 1032.

RICHMOND, VA., JUNE, 1938

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SOME HISTORICAL RESEARCHES UPON THE MECHANICAL TREATMENT OF FRACTURES OF THE LONG BONES.*

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Washington, D. C.

What the cave man did when his enemy laid him low with a well directed blow of a stone axe so that his thigh buckled under him, we do not know. If, however, he survived to walk again, we may be sure that he received something in the way of mechanical treatment. A wise and pithy saying credited to a pioneer physician is, that he who with a shingle and a shirt cannot care for a fracture, deserves not the title of follower of Aesculapius. Perhaps the cave man was without a shirt even of sorts, and he must perforce have lacked the shingle, yet the branches of trees he had, and moss and dried grass for padding and crude thongs of hide as well as stout vegetable fibre.

There is no attempt here to cover the history of the treatment of fractures through the centuries, for indeed that would be an impossible task. My wish is rather to travel from the first recorded work in the mechanical methods of treating broken extremities through the centuries to our own times. What did the ancients have to work with and how did they use their heads and hands? Did they boast of their successes and keep silent upon their failures? They lacked any knowledge of asepsis, they had no anesthesia, they had no X-ray, no adhesive plaster. Moreover, the physicians were torn by internal dissensions and jealousies and had not, we may venture to say, the confidence of the public. They had their hands and the courage of their convictions. Let us see what they made of these.

We must not assume that the history of medicine began with the Greeks. In more than 3000 years before the time of Hippocrates disease and injury had received serious study in Egypt and in Mesopotamia. The most famous document relating to

*Read before the Peninsula Academy of Medicine on February 21, 1938.

the ancient practice of medicine is undoubtedly the Ebers Papyrus, which was written about 1500 B. C., thus antedating Hippocrates more than 1000 years. Portions of the papyrus may have been written as far back as 5000 years ago, and it is in marvelously good condition. Much of it is impossible to understand clearly, since the phraseology is so archaic. The papyrus was found at Thebes in 1862 and it is concerned largely with folk lore, drugs and incantations, dividing bodily ailments into two groups, those which could be seen, such as ulcers, boils, and so on, and those which could not, as certain internal disturbances. In other words, it recognized subjective and objective symptoms.

Excavations carried on in Egypt have shown in many of the early cemeteries that arthritis and fractures of the long bones, especially the ulna, were very common, but no mention of fractures can be found in the papyrus. In its consideration of more than eighty recognized diseases such as cystitis, impetigo, falling of the womb, chalazion, and so on, there is found nowhere any reference to broken bones. We know that the Egyptians, like the ancient inhabitants of Mexico and South America, trephined the skull, yet they tell us nothing of it. What is the explanation of this? We do not know. Perhaps it was that broken bones were lacking in dignity and did not lend themselves to the use of magic formulas. Undoubtedly the unlettered bonesetter got his man, and if he had a great success could boast only to his own generation.

One who reads Hippocrates cannot fail to notice his marvelous talent for original observation, as has often been remarked. He teaches us a lesson of humility when we compare our present state of knowledge with that of our forefathers and realize how well many things were understood twenty-three

centuries ago. Hippocrates dealt with practically everything connected with medicine and surgery, but fractures occupy no large part of his writings as far as I am able to determine.

With Hippocrates as with others in later years the word "extension" appears to be used not always as the opposite of flexion, but frequently as meaning traction or pull in a straight line or in what was called by Hippocrates, the natural direction. Hippocrates gives us some fairly elaborate means of manual extension and replacement of fractured extremities, and in common with others he lays down very definite directions for applying bandages about the fractured limb. The dimensions are given as three or four cubits in length and from three to six inches in breadth, with the warning that they should not be too wide for the size of the limb. The bandages should be removed on the third day and the limb rebandaged a little tighter. Nowhere do we find full descriptions of the *ferulae* or splints, of their dimensions, nor of the materials of which they consist. Palladius speaks of their being made of certain kinds of wood, and when wood was not obtainable reeds were to be used, and he also gives directions for applying the splints with three loose fillets, one at each end and one in the middle, while the danger of tying ligatures too tightly is emphasized.

Hippocrates, however, gives a partial description of a splint, mentioning a piece of wood a cubit or somewhat less in length like the handle of a spade, but that is as far as he goes. The use of shawls and slings is somewhat minutely described. In the case of the fracture of the bones of the leg, more powerful extension is necessary and thongs of ox-skin and the nave of a wheel or other similar object were advised against counter-extension by assistants who grasped the shoulder and the ham of the patient. A smooth, round piece of wood driven deeply in the ground, the upper extremity resting against the perineum to prevent the body from yielding when the bone is pulled upon, is also mentioned. Pieces of wood, too, were fastened about the armpits on each side to aid in counter-extension. Indeed, many other methods of using wood and beams as well as windlasses are described, and we even have crude illustrations of these in early manuscripts. To those physicians practicing in a large city Hippocrates advises to have prepared a proper wooden machine with all the mechanical powers applicable in cases of

fractures and dislocations, either for making extension or acting as a lever. When the parts are adjusted the bandages are applied with the limb in a stretched position, the end of the bandage placed over the fracture and the first turn made at that place. Hippocrates mentions canals or gutters, but is not certain whether they should be used. At a later date we find also a commentary by Galen who described a mechanical apparatus with a drawing of a machine so constructed "that extension and counter-extension are constantly kept up by a double set of pulleys." This last is one of the few places in all ancient medical literature where the possibility of continuous traction is described or considered.

Let us see what the Arabians know about fractures. Neither Rhazes of Bagdad who flourished in the ninth century, nor Avicenna who appears in Bokhara and who was known to the Arabians as the "Prince of Physicians", have given us any light on the treatment of fractures a thousand years ago. One of the best known was Albucasis, who lived and practiced in the latter part of the eleventh century. Albucasis exercised his art over a period of many years, but practically nothing is known of his personal life. He is well known, however, by his work on the *Al-tassrif*, or the "Art of healing". This work in manuscript lies in the National Library of France, and has never been published in its entirety. Translations in Hebrew and Catalan have been made, and there is also a Latin translation of the surgical section in Gui de Chauliac's *Chirurgia Parva*. Le Clerc has made a later translation in 1861, and it is the third book which is concerned entirely with fractures, that arouses our interest. Albucasis warns his students that this portion of medical science is largely abandoned to ignorant lay practitioners who have never laid eyes upon the ancient books, nor have they ever read a word upon the subject. He explains that he has studiously used the ancient lore and endeavored to understand and to apply it to the science of his day, aided by his own life long experience. Finally he has written a book in his old age containing his entire knowledge and experience. Albucasis did not "rush into print", we may be assured.

His advice on the treatment of fractures in old and young by a proper diet, his description of the signs of the different fractures and their differentiation are perfectly good today after more than eight hundred years—indeed, you could be reading a

modern work on surgery. Albucasis warns against a too strong extension and too much pressure in the reduction such as is practiced by the ignorant, as this produces inflammation. He warns that continued pain means trouble. His description of splints and bandages is minute and simple. He advises the use of liniments for the skin and soft stupes. If there is much inflammation he says we should wait and use expectant treatment. The splints should be removed or loosened in three, five, or seven days. The treatment of fractured humerus is much as practiced before the World War. He tells us that a fracture of the radius is less serious than that of the ulna and the former much easier of reduction. If both bones are fractured traction will have to be

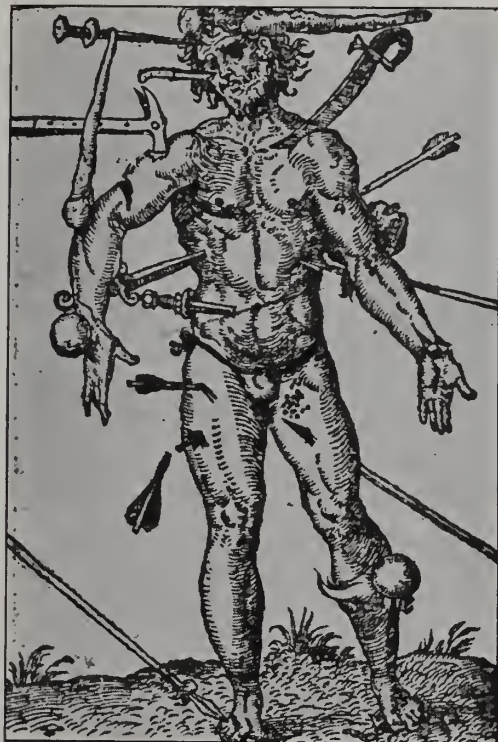


Fig. 1.—“Badly wounded man.” From Tagault's *Treatise on Surgery*, 1580. Used to illustrate war missiles of the time and their effect on the bones and tissues.

strong to effect reduction. He recommends the use of the splint for twenty days after which a sling may be used. The fracture will be healed in thirty to thirty-two days. In leg fractures he uses a gutter splint with coaptation splints. This is especially good if the skin is in bad shape, for one can examine the skin every few days.

Nowhere do we find mention of continuous traction in Albucasis. The Arabians knew it not ap-

parently, but merely followed Hippocrates, whose surgical knowledge Albucasis was perhaps the first to recognize, as Hippocrates was not fully known to the Arabians even at this epoch. Galen he knew and quoted in his medical writings, but we find little surgical help in Galen's writings.

One of the most famous medical men who ever lived was Gui de Chauliac, a romantic and lovable character. His name has been spelled in a variety of ways, but we can always recognize him because he is referred to as “Our Guido” or “Our Guy”, his surname coming from the hamlet in which he was born in Auvergne in France. In reading the works on his life it has always seemed to me that his biographers looked upon him with love and affection. The oldest work upon his life which I have been able to examine is a book, “*The Great Surgery*”, of some 250 pages published in 1519, more than four hundred years ago, in Latin. This is undoubtedly a partial reproduction of the manuscript written in 1363, shortly before his death. There have been a

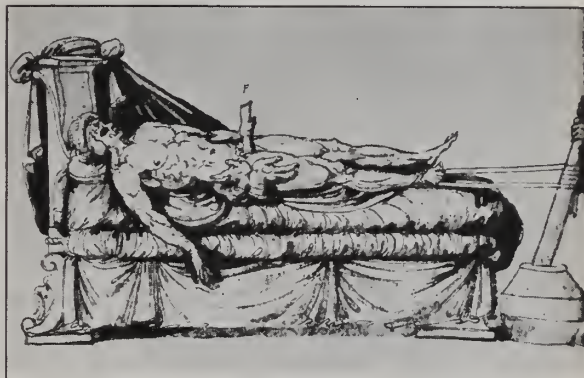


Fig. 2.—This shows an illustration used to embellish a translation of a 10th Century manuscript on surgery. Appears in Vidius' works about 1516. The artist is probably Primatrice. This illustrates an attempt at reduction of a fracture of the femoral neck. Only the hands of the operator are shown.

vast number of translations in French and in English. This work is in seven chapters on Anatomy, Aposthemata, Wounds, Ulcers, Fractures and Dislocations, Special Diseases, and Antidotes.

Guy de Chauliac is a great quoter of Galen and Avicenna—in fact, the old time medical man sometimes sounded like a lawyer, and like the lawyer he loved his precedents. Today the lawyers still cling to precedents, but in medicine the law and the prophets of yesterday are often the heresy of today. Brennan calls Gui de Chauliac a thorough Galenist and recognizing Hippocrates only when admitted by Galen.

In Chauliac's book, which was the surgical bible for centuries, we find a few pages on fractures, and he could not have known of the surgical works of Hippocrates. It is significant that this immense work on medicine in general which contains more than a quarter of a million words, devotes only three per cent of its wisdom to fractures. Apparently the old timers still liked their ulcers, their fluxes and infections best, and I am persuaded the bonesetters and barbers got most of the broken bones. Much of Guy's description reminds me with suspicion of Albucasis, and his oft quoted Avicenna does not smack of originality. Nevertheless, he was a pioneer in surgical authorship and deserves his title of "The Father of Surgery in Europe".

Three hundred years ago when the Pilgrim fathers were gathered about Massachusetts Bay, one Peter Lowe, Scottisman and Doctor in the Facultie of Chyrurgerie at Paris and Ordinary Chyrurgian to the French King, had published "A Discourse on the whole art of Chyrurgerie".

In Lib. VIII Chapter III of "*Curation of Fractures in generall*" he says, "Now remaineth the cure for the which ye must consider, first if there be inflammation, to defer the reduction till it be past, for to avoyd great accidents, then wee must have a quantity of whites of Egges and oyle of Roses beaten together with Compresses, bands, ferules, machins, lacs, oxirate and men to helps you, with other things necessary for the purpose, there remaineth yet fvee points, the first is in extension of the member, which is done by laying it on a bence or other place proper—the sicke being well scituated, there must be two persons to hold the member fractured, the one at ye nether part, the other at ye upper part. If the hands be not sufficient to doe this wee take cords of strong cloth and binde fast the member one to the upper part another to the nether, which shall be drawne by two men contrary as ye have heard." If machines are used in extension after reduction is complete, he advises to loose the machines so the muscles may go to their own natural place. Then the fracture is to be bound up and held, and he too advises medicaments, wine, whites of eggs, oil of roses, etc. He gives long and carefully described methods of putting on the bandages and splints, but we find nowhere any mention of using weights or pulleys for continuous traction in fractures of the thigh. He tells how often to look at it, on the seventh, twelfth and twentieth days, following Hip-

pocrates' advice. He also advises as to the kind of meat and the absence of strong drink, and if inflammation is past the patient may eat veal and mutton. At the end he makes a pithy remark that after all "It is better to suffer a little deformitie of a part than losse of the whole body, to wit, death, which often happeneth." I imagine two or three inches of shortening was counted no shame for the surgeon in those days.

Here is a small work, "The Complete Bonesetter", by Friar Moulston of the Order of Saint Augustine, printed in London in 1656. This is a treatise which covers subjects of bonesetting, ruptures, diseases of the eye, hygiene, and a large number of prescriptions for practically all known ailments, such as coughs, pains in the back, scabs, pes-



Fig. 3.—Illustrating the reduction of a fracture of the leg in Germany in 1528. This is supposed to be on the battlefield but there is no evidence of any army in the neighborhood.

tilences, choleras, and the plague. Also a very considerable treatise on the significance of changes in the urine. The author mentions broken bones as being accidents often happening in the country amongst poor people where surgeons, especially good ones, are very scarce. Much danger ensues to the party thus afflicted through neglect or misdressing, a point brought out during the World War and since. The first progress to be made is diligently and dexterously to bind and reunite together the fractured bones into their proper seats and places again. Second, care is to be taken that the bones thus reduced be so kept and preserved without motion to gather strength. Third, we must use means to secure callus whereby the members broken are conglutinated, joined, and fastened together again. Fourth, we should take heed to prevent and preserve the members from those accidents which are apt to follow the fracture, bringing much hurt to the pa-

tient. By this the author means injuries sustained from transportation and possibly the danger of compound fracture. He gives careful directions for the molding of the fracture whereby complete reduction may be secured. Indeed, outside of the quaint expressions used one would believe he were reading a modern book.

He next speaks of the means to be used in keeping the fractured bones in position. These are splints, binding, ligature, and rolling of the fracture, and by all means, says he, "Keep the member without motion". Then follow oil of roses, whites of egg, and the use of moist dressings to draw out the humors, and so on. Now to keep the member from pain and accident there must be splints prepared, smooth and equal without roughness or crookedness, for padding. He uses cloths doubled four times, wet in rose water, with wool or cotton wrapped about the splints, binding them gently on. He cautions us not to touch any joint if the broken bone be near such, lest the joint become inflamed and ulcerated, but make the splint shorter and smaller. He does not remove the splints until twelve or fifteen days unless there be pain, inflammation, or itching in the fractured part. In such case the splints are to be unrolled the third day at the furthest, and washed with warm water. Many are the ointments of camomile, mallows, wax, frankincense, and oil of bayes, to be used to resist accidents and strengthen a broken member, but one looks in vain for any suggestion of apparatus beyond the splints and at any extension or counter extension. Withered members and shrinking sinews following broken bones are mentioned indeed, but not more than mentioned.

Now comes Verduc some two hundred and twenty-five years ago, and he too hath written a book, "*La Manière E. Guérir par le moyen des Bandages, les fractures et les luxations.*" Let us see what the author says about fractures of the femur. He mentions the difficulty of making a diagnosis between a fracture at the neck and a dislocation, and reveals the shame and sorrow that have been his on discovering his frequent mistakes. He advises manual replacement using the palms of both hands and kneading the fracture, but "When the hands are not strong enough to make sufficient extension, recourse to the cords must be had." One is put on close to the knee and the other higher near the buttock, over good compresses wetted with vinegar and water, to prevent injury to the skin and soft parts. Two as-

sistants pull equally with might and main in a straight line along the axis of the limb, one above and one below, carefully watching that no serious injury be done, and then the surgeon "makes the adjustments using the palms as before." Then the maneuvers over the two limbs are compared to see if reposition is correct and the splints or thin boards, the length of the compresses in the lateral parts both outside and inside, a finger's breadth apart are put on.

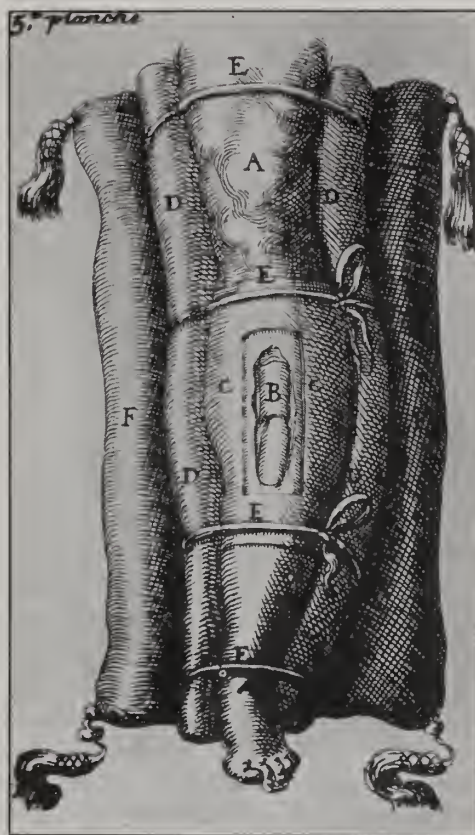


Fig. 4.—An illustration of a compound fracture of the tibia by Verduc, 1712. This is a pillow splint with side reinforcement.

This was more than 200 years ago and no illustrations appear in the tiny book written in its quaint French. One can easily picture the pulling and hauling and the screams of the patient as the burly assistants sweat at their task on the ropes—and thank God that today we have anesthesia. There is no mention anywhere of retention with the aid of traction, and we well know what happened when the muscles resumed their spasms, but undoubtedly many a reposition was well done and as good results were obtained, perhaps as was the case a few

years ago where strong skin traction with weights was applied in many cases insufficient to overcome muscular pull. We may assume that at the center of the French medical world of the early eighteenth century no such thing as constant traction was even thought of. In other words, if the immediate result was apparently good and the reduction done according to the formula, the later permanent shortening was an act of God.

In the *Surgery* of Jean Tagault, published in Lyon in 1580, the subject of fracture covers some forty pages of this more than 750-page book, less than 10 per cent, while ulcers occupy more than a hundred pages and wounds two hundred pages with tumors about the same. Thus we see the relative unimportance of fractures in the life of the surgeon of those days. There was nothing mystic about a fracture and you could cure it neither by an incantation nor a draught. Moreover, a good blacksmith, who was bonesetter on the side, could no doubt outdo the medical man who was frequently averse to shedding his shirt and his sweat in a cause unlikely to bring him great renown and many gold pieces.

What does M. Jean say about the matter? After his first two chapters which are devoted to the elucidation of principles not necessarily conceded at this day, he says, "When a bone is broken to the point of a solution of continuity, we should try to do what will cure the fracture by joining the disunited parts and get them to unite and then if we are unable to secure this and because of the rigidity of the parts, the alternative is to agglutinate the parts of the bone in question by other means. If this is impossible, we must admit the malady is incurable." He thus prepares what might be called in our day, an alibi!

The author goes into great detail in the matter of bandaging after manual reduction. One is struck with the frequency of his quotations from Hippocrates, Galen and Celsus, dead many hundreds of years, and the timidity of his own observations. The author makes much mention of the use of padded splints, and there are two illustrations showing the reduction apparatus used where manual reduction has failed. Continuous pull as a means of overcoming deformity and the use of weights is not mentioned. No special means of holding fractures of the upper arm or forearm can be found.

M. Le Clerc, Physician to the late French King, wrote a book in 1727 entitled, "The Compleat Surgeon." In order to avoid being misunderstood,

he added or "The whole art of Surgery". Let us see what are his modest ideas. In chapter eleven we find this heading, "Of the Fracture of the Humerus or Arm Bone." This is distinct from fractures of the forearm, such fractures being described two hundred years ago as fractures of the bones of the cubit. In setting the humerus the author advises a strong extension to be made if the two ends cross. To accomplish this the patient is to be placed on a little stool or seat and supported by a servant, two other assistants being employed to draw, one at the upper part and the other at the lower, on either side of the fracture. The operator is to reduce the two bones by closing them on all sides with the palms of his hands, after which the dressing and bandage is prepared. He lays around the fracture a bolster steeped

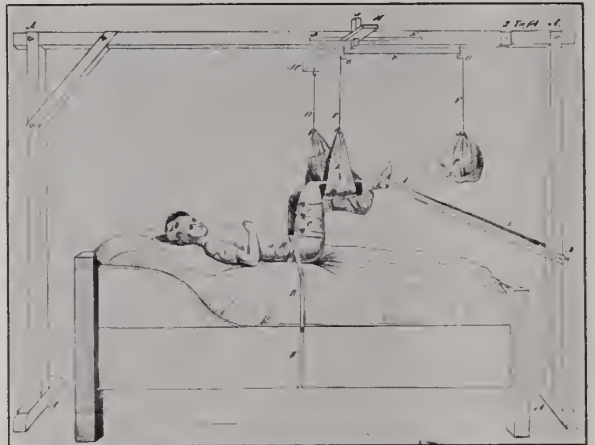


Fig. 5.—Apparatus used in Germany in 1851. Overhead traction, vertical, using the weight of the body for countertraction. This method has long since disappeared except in the case of infants where the principle is still in use.

in some proper liquor, as claret or oxycratum. Three bands are to be taken, by which are meant splints, three or four fingers broad and an ell and a half long. The splints would thus be about $2\frac{1}{2} \times 6$ inches. The first of these is laid upon the fracture, around which are made three turns of the bandage. The second band is applied to the fracture on the side opposite to the first. The third band is placed anywhere that seems advisable, and several pads or bolsters laid round about the arm with many turns of the bandage around the arm and body. Finally the arm is put into a scarf, which is placed under the armpit and the four ends raised up and fastened on the opposite shoulder, the hand lying farther than the elbow.

In a subsequent chapter on the fracture of the thigh-bone, he states that if the bones pass over one

another a fracture is very evident on account of the shortening. If the hands are not sufficient to make the great extension or pull, then recourse must be had to straps and engines. Here again are many directions for applying bolsters, bands, and rollers, all dimensions being carefully given, but it is difficult to understand after all this talk exactly what the operator is to do. I find nowhere in this chapter a description of a body-splint running up under the arm as used by Desault. He advises a sole under the foot and the heel to be supported by a small roll, the thigh and leg being laid in "junks", the one (inner) extending to the groin and the other outer "somewhat longer"; apparently the long outer splint went part way up the body.

However, in another chapter there is a remark attributed to Arnaud on the fracture of the thigh, in which he says that the external splint or "junk" must go right under the armpit and be wrapped in two large napkins, one of which must pass over the belly and the other over the breast. To hinder the patient from turning across and sliding down towards the feet of the bed, he advises planting a stake into the floor underneath the bed and passing it through the matting and bedclothes, so that it may be between the patient's legs. This ought to be as thick as the small of the arm and covered with some stuff or other that it may not hurt the patient. He speaks also of two "pullies" fastened at the end of the bed with weights suspended to draw the thigh and keep it in a straight posture, and if you would not have this weight or stake you must make use of "muffles" fastened one to the upper and the other to the lower part of the thigh. These he observes draw more or less strongly and are more easy or troublesome as they consist of a greater or lesser number of pulleys. At the end he betrays his lack of confidence in this apparatus, which we must admit is difficult to understand from the description, by saying, "I advise young surgeons not to make use of this method, it being too difficult and even inconvenient for the patient."

Coming down to more modern times, at a period shortly after the American Revolution, we find a thesis by Robert Black and dedicated to his teacher, Philip Syng Physick, sometimes called the "Father of American Surgery". This is an inaugural address on fractures of some forty-five pages, and may be presumed to reflect the knowledge and practice of the treatment of fractures at one of our foremost

American medical schools at the close of the eighteenth century. The author states, as had many of those who have preceded him and indeed who followed him, that since the days of Hippocrates the art of treating fractures has occupied the attention of practitioners of the healing art. The following points are of interest. In describing the position of the patient the author states Mr. Pott was the first man who warmly recommended the bending position of the limb. Mr. Bell who followed him, recommended also the bending position not only while reducing but during the cure. He remarks as to the universality of the horizontal posture on the back.

In his thesis Dr. Black speaks of the fracture box, but does not describe its use. He remarks it is no uncommon thing both in the dislocations and fractures for us to see and hear of six, eight, or even as many men as can stand around the patient exerting their utmost force to extend the limb, and frequently without success. If we take the view of the different authors on the subject, we will find that the surgeons of all the ages have put their invention to the rack to frame machines capable of exerting the greatest possible force; which has sometimes been so great as to tear the muscles to pieces while the unhappy sufferer must calmly submit to a fate sanctioned by custom. (These remarks were made with reference to the muscular obstacle to the reduction of fractures, which if it could be prevented would entail little difficulty in the reduction, and the time was of course before the days of anesthesia).

This brings us to what the author has been shooting at all the time, namely, to please Dr. Physick to whom he dedicated his work, and, second, to emphasize muscular reaction as of the greatest hindrance to success. How does he get around it? By bleeding, *ad deliquium animi*. In other words, he bleeds the poor devil until he faints, and before the victim recovers, his fracture is set, there being no pain in the manipulations. He advocates opening the red artery at the wrist if the patients do not bleed sufficiently. The sanguinary doctor insists that no danger is present and no facts support the idea that there is any fatality to be expected from massive bleeding. He condemns the splints in common use, as not only useless but even injurious since they must be bound on so tight as to practically always produce irritation and inflammation.

"The most successful and easy mode of treating a broken leg," says he, "is to place a board on the

bed or mattress, put a pillow on the board, and lay the limb in a horizontal position on the pillow; the sides of which must be pressed up against the leg; then let two thin pieces of board or shingles, as long as the limb, be placed one on each side of the pillow, and secured by tapes passed under it, and tied moderately tight." Any disagreeable effects from pressure are prevented by the interposition of the pillow. The limb may be completely reduced to its former shape; for the purpose of ascertaining this it should be compared with the corresponding sound limb, and retained by stuffing in a little tow or a few rags at the necessary points. For a fractured thigh, the board, pillow, and side pieces should be of sufficient length to extend from the top of the thigh, below the foot. The lower end of the board should be elevated so as to raise the heel higher than the hip, as it will contribute considerably to the ease of the patient and somewhat to the straightness of the limb. The author observes that persons sometimes get both legs broken, and there is therefore no sound limb for a criterion. "This is a very uncommon accident," says Dr. Black, "and when it does occur, we must reduce the limbs as near the natural state as possible, and compare them together, so that they shall at least be alike."

I looked everywhere in the thesis for any sign or description of traction in the case of fractures of the extremities, but the author makes no mention of it. Apparently he cannot be cured of his *deliquium animi*. Indeed, his last sentence is unforgettable and significant, and reads: "I will close the description by again recommending the free use of the lancet."

In the nineteenth century we find the fracture box coming into use. John Neill of Philadelphia in 1855 writes on the new means of making extension and counter-extension in fractures of the leg and thigh. Neill's apparatus is a fracture box with a foot piece. He uses adhesive plaster, kept in place by a roller bandage. Counter-extension is made against the perineum and traction is secured by using a windlass at the outer portion of the splint, the traction bands passing through a hole in that portion of the splint projecting below the foot. Up to this time, that is preceding the fifties of the last century, nothing resembling a weight for extension has been mentioned.

In 1859 two doctors named Burge of Taunton, Massachusetts, published a report of seventeen cases

of femoral fracture with a new apparatus. The authors conducted experiments for more than three years, finally presenting their observations to the world before the Brooklyn Medico-Chirurgical Society. This is a small booklet of less than one hundred pages. The authors observe that the first great advance in reduction and retention was made by Desault, who introduced the long straight splint from the crest of the ilium to beyond the foot. They advocated what appears now to be a very complicated apparatus, consisting of two mattresses, a wooden platform hinged, hair cushions, padded splints, extension and counter-extension apparatus, etc. In their paper published in 1859 the authors mention adhesive plaster kept in place by a roller. They compare previous apparatus by Hamilton and others with their own seventeen cases treated with their apparatus. In a large series of other cases the average shortening was more than an inch, while in the cases reported in Burge's apparatus the average was $1/3$ of one inch, certainly an excellent result if correctly measured, and comparing very well with those treated at the present day.

One would think that the experiences of the Civil War would have given impetus to new and improved methods of handling fractures, but, alas, a fracture in the War Between the States was usually compound and often fatal. I have examined thousands of pages and many hundreds of illustrations in the huge Medical and Surgical History of the War without avail as far as apparatus goes. We see everywhere evidences of shortened limbs and the pages are replete with artificial limbs and crutches. Again there was no progress.

In the years that followed, antisepsis and asepsis appeared, steel, fabric and plaster of Paris splints came into use, but no revolutionary methods of the mechanical treatment of fractures were discovered. The era of mass warfare, and of industrial and motor injuries had not arrived.

A quarter of a century ago in the Balkan War, Klapp in Beograd, Servia, used skeletal traction in fractures of the long bones by means of wire running through the bone. I am not even certain he was the first to use this means, but at least we have the date, which is more important than the person. Thus what many surgeons in the past had dreamed of, had come true. Skeletal traction had come to stay. A few years later Hertzberg in Germany and our own Ransohoff gave us "horseshoes" and tongs

which were used for the same purpose. With the succeeding years came the elaborate frames, fitted apparatus for every kind of extension and every variety of position, and, finally, the general use of piano wire for traction, as used by Kirschner and others.

What is the result of centuries of observation as shown in the writings of the foremost medical men in the more than 2000 years which have passed since Hippocrates of Cos came upon the scene? I think we can say that Hippocrates and his followers in all ages knew and diagnosed fractures of the long bones about as well as we did prior to the discovery of the Roentgen ray. In the treatment their apparatus was crude and inefficient, but in simple fractures no doubt they got some surprisingly good results. Many of their doctrines were sound. No doubt they recognized the value of continuous traction but did not know how to get it. Even as late as the fifties and sixties of the last century the apparatus used was crude, and adequate traction in fractures of the femur seldom occurred. Traction in the case of fractures of the arm was almost unknown. Many of our surgeons of recent years looked on fractured femur as operative, especially if muscular interposition was present.

So we can say that probably no startling advances occurred in the treatment of simple fractures of the long bones from the time of Hippocrates until the advent of anesthesia, one hundred years ago. Another advance occurred after 1895 when Roentgen gave us his discovery. The third great advance came, if we except the work of Hodgen and the later work of Whitman, in fractures of the femoral neck, with the Balkan and the World Wars. The Balkan frame and skeletal traction, first with the employment of the tongs and Steinman pin and later by the use of piano wire, have revolutionized much of our treatment and have made bad end-results less excusable. Of course we should not minimize the skilful operative work of the orthopedists, but that is another story and this paper is not attempting to cover it.

With the close of what is really only a fragmentary talk, I think you will agree with me that we must respect the knowledge and skill of those who

for 2000 years preceded us. They had neither X-ray nor anesthetics, they had no adhesive plaster and bandages, no tongs nor piano wire; they had no asepsis, and to cut was to kill. What they saw they saw, and what they felt they felt, and their minds and reasoning powers were as good as ours perhaps, as long as they kept astrology and incantations from influencing their judgment. Lastly, they never produced that curse of modern medical literature, the "before and after" photograph wherein a hideously deformed hag on the left becomes a Miss America on the right. I have done it and so have you. May we be forgiven and may we not pity the ancient followers of the healing art who did their best even as we are doing ours today.

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THE PATHOLOGIST CONSULTS THE CLINICIAN.

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There are some problems in the field of the specialty of pathology that should be called to the attention of clinicians in general as, if they are not remedied, medicine as a whole will suffer. With a clear understanding of these problems, all clinicians can assist in their eradication and thereby elevate and perpetuate the practice of scientific medicine as a whole.

It is no longer necessary to emphasize that the practice of clinical pathology constitutes a specialized phase of medicine. Its efficient practice demands as much training and experience as is required in any other specialty. The many ramifications of clinical pathology as well as its close and interlocking relation to medicine in general indicates the degree to which the pathologist must be informed, and the skill and acumen he must develop.

It would be superfluous to dwell on the importance of the specialty of clinical pathology in the practice of scientific medicine, as laboratory methods have already received universal recognition and are now considered indispensable both in hospitals and private practice. Even though this fact is well known to those practicing scientific medicine it is lamentable to know that great numbers of patients, poor, middle class and rich alike are still deprived of the council of the clinical pathologist in the diagnosis and treatment of disease, therefore, deprived of the benefits of scientific medicine. Leaving out of consideration the care of the sick in the home and office, we find that the utilization of scientific medicine in the practice of medicine in hospitals is markedly restricted.

In a survey of hospitals made by Hillkowitz¹ which left out of consideration Government hospitals, institutions for the insane, many state institutions and sanatoria, he found that of the 3,063 hospitals in the United States, approximately one-half (46.9 per cent) are functioning without a clinical pathologist. Roughly, one-third of the hospitals approved fully or provisionally by the American College of Surgeons do not conform to its recommendation of having the laboratory under the direction of a physician-pathologist. Therefore, patients in such institutions are not being given the benefits of sci-

tific medicine. Quite a few of these hospitals are under more or less supervision by a part time clinical pathologist, his direction is rather nominal and consists solely of interpreting such tissues as the administration or the staff choose to send him. Hospitals should not send their tissues to a pathologist and put the laboratory in charge of a technician. Such a hospital may be listed as "Class A," but, as Kilduffe² has said, "This signifies merely 'lip service' to set forms and standardized procedures leading to varied degrees of stagnation." A part time pathologist should be invested with full responsibility for the conduct of the laboratory and the choice of its personnel, he should visit the institution at periodic intervals and participate in the monthly staff meetings. If the hospital laboratory is important, the pathologist by whom it should be directed is still more so; for in these days it is also rather obvious that the standing of the hospital pathologist and the character and efficiency of the laboratory he conducts, which invariably must be a reflection of his own, in no small measure may well be indicative of the character and efficiency of the hospital staff in general as well as of the work done in the hospital.

Probably one of the reasons why so many hospitals are functioning without a clinical pathologist is that there are only 881 pathologists in the United States or about one to every four hospitals. Doubts have been expressed whether all of the 881 are competent to serve as hospital pathologists with all the attributes that this implies, especially in the field of tissue diagnosis. With the institution of the American Board of Pathology to certify pathologists we may expect more exact data as to the competence of the specialists in clinical pathology in the future.

How can proper service be furnished in the places now vacant of scientific guidance? Hillkowitz¹ says, "As to small hospitals, say under twenty-five beds, I hazard the opinion that, except in isolated communities, they should not be encouraged but should be absorbed by larger institutions. They are mostly operated by individual physicians, cannot afford even a technician, and often are merely boarding houses with the fancy title of hospital * * * * (this) dissipation of energy into small units is contrary to efficiency and proper planning."

Given the proper distribution of pathologists throughout the various states, the hospital laboratories now lacking trained direction could be taken care of by pathologists on a part time basis. For the entire United States, this would constitute one pathologist for every three hospitals which is by no means a difficult task in the efficient supervision of a one-hundred-fifty bed unit.

A pathologist in a metropolitan center could also easily direct the hospitals in the neighboring small towns which are now to a large extent neglected. They could thus be brought up to the level of the big town institutions.

Why, when some other specialties in medicine are crowded, should the specialists in clinical pathology be so few in numbers, and why are medical students not choosing this branch of medicine for their specialty? If there are too few clinical pathologists now, what about the future? Will there be more, or less? If there is not some way to interest talented medical students in this specialty so that there will be pathologists that are well trained and competent and whose cultural and scientific education stands on a par with that of other specialties of medicine, it will mean that the general profession of medicine will suffer to an immeasurable extent in its scientific aspects and that the progress of medicine will be retarded almost beyond conception. I will list several reasons for medical students' lack of interest in pathology as a specialty, they being the ones most frequently given:

(1) The clinician's attitude. Kracke³ has said, "There seems to be some tendency on the part of our clinical colleagues to set laboratory medicine apart from clinical practice and to look upon the average laboratory as a room filled with peculiar, eccentric, scientific people who issue their findings in a systematic manner on pieces of white paper which are attached to patient's charts. This attitude has resulted in some hospital administrators placing the laboratory in a category similar to the drug room, the diet kitchen, the laundry and other unscientific divisions of hospital activity." In some hospitals it is debated as to whether the pathologist should be a member of the staff. Medical students hesitate to enter a specialty that is looked upon in this manner. In this connection, I can do no better than to quote Fox.⁴ "A pathologist," he says, "is as much a chief and consultant as any other member of the staff and, consequently, equivalent to any staff

chief. The pathologist should be in no way subordinate to the managerial director or the board of directors other than would be the case with a surgeon, a pediatricist, and the like. His duties, if they have to be outlined and interpreted, are professional matters at the discretion of the staff, (and) any member of the staff should be willing to cooperate to the extent that he would be advised and influenced by the staff as far as hospital matters are concerned * * * Finally, the position of a pathologist must remain a professionally ethical one upon a gentleman's agreement comparable to that holding good with his associates upon the staff."

(2) The pathologists remuneration: Many factors have operated to make the economic foundation of this specialty inadequate or insecure. It should emphatically *not* follow that because, by virtue of his choice of specialty he has of necessity removed himself from the higher income brackets common to other specialties, that he should therefore be penalized in the matter of gross income or that, unlike other specialists or practitioners at large, he should be deprived of the expectation that as his skill and experience increase his income should not also. His income should average the professional income of the rest of the staff if his training and experience are on a par with theirs.

(3) Pathologists usually work on salaries: This practice has come about mainly in the evolution of this specialty in connection with the growth of hospitals, and since pathologists are often employed by hospitals the question arises, "How should the pathologist be remunerated?" The discussion of this subject would be too lengthy for this paper and has been covered most fully by Kilduffe.² The specialists in Roentgenology have long since settled a similar problem.

And, finally, I would like to call the clinician's attention to the semi- or total socialization of this branch of medicine. In this respect it stands unique among the medical specialties. In recent years there has been much discussion and some activity toward the socialization of medicine. For clinicians to accept placidly and even encourage the socialization of the practice of pathology is to invite and encourage socialization of all branches of clinical medicine. This socialization of pathology has come about largely through the creation of a nation-wide laboratory service operated by the various states under their departments of health. In some states such

laboratory work is strictly of a public health nature and is designed for the prevention of infectious diseases. This should be its only function. In a few states such service is restricted to indigent patients. In most states laboratory service is available to all of the citizens. Why should the tax payers assume the expense of laboratory services for patients who can well afford to pay for them? In some states physicians send their office laboratory work, for which their patients are charged, to the State health laboratory. Hospitals have their Wassermann tests sent to the State health laboratory rather than pay a technician who is competent to perform the test and a pathologist who could supervise the work. In some states the laboratory service is not restricted to that of a public health nature but includes all phases of laboratory activity. In certain parts of New York State there are state and county subsidized laboratories which maintain a service for the sick and the well, in the home and in the hospital, day and night. This service includes not only laboratory examinations of public health interest but other procedures such as tissue examinations, preparation of autogenous vaccines, basal metabolism tests and electrocardiography. This is provided to all citizens regardless of their ability to pay. Some of these counties operate branch laboratories in the various hospitals. These governmental agencies are actually engaged in the practice of pathology. The specialty of pathology is completely socialized in these areas. *Considerable thought should be given to the ultimate effects of such a program as it may be only the forerunner of the complete socialization of clinical medicine.* Clinicians should be seriously concerned with this trend, which may well develop into an opening wedge leading to provision of clinical services on a similar basis. In fact, this is being tried out on a small scale in some areas.

In conclusion, let me quote from Kracke's⁵ presidential address, "The Future of Pathology," read before the American Society of Clinical Pathologists. It was from this paper that the discussion of the socialization of pathology was taken. "Most of the difficulty with the specialty of Pathology today can be traced to economic ills. These have come about largely through the various influences already discussed. There is no question that much of the trouble is the result of the placid attitude of organ-

ized medicine in permitting an important specialty to be 'sold down the river of socialized medicine' and there is reason to believe that the specialty stands on its last legs. Few young men are going into it, so where will it be tomorrow? * * * * All of this is a bad omen for the future of scientific medicine, and there can be no doubt but that medicine will deteriorate when this comes about. The pathologist of today, if he is concerned with the future of scientific medicine, could with justification plead for the institution of federalized medicine as the best means of saving it."

SUMMARY

Clinical pathology is a specialized branch of medicine. In the practice of scientific medicine it is considered indispensable. Approximately one-half of the hospitals in the United States are functioning without a clinical pathologist, i. e., without the utilization of scientific medicine. There is but one available qualified clinical pathologist to every four hospitals. There are several different ways by which proper service could be furnished in the places now vacant of scientific guidance. Very few medical students are choosing pathology as their special field of work, so that the dirth of well-qualified clinical pathologists may be still more marked in the future, in which case the general profession of medicine will suffer to an immeasurable extent. The main reasons as given by medical students for not entering this field are: the attitude the medical profession in general assumes toward this specialty, and economic reasons. The semi- or total socialization of this specialized branch of medicine accounts for much of the difficulty. The socialization of pathology may be only the forerunner of the complete socialization of clinical medicine.

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CHILDHOOD TUBERCULOSIS—AN ANALYSIS OF SIX HUNDRED CASES TREATED WITH A SURVEY OF RESULTS ONE TO ELEVEN YEARS AFTER DISCHARGE.*

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For many years there has been considerable controversy regarding the probable benefit or liability from a childhood form of tuberculous infection. Some have believed that infection contracted at this period of life will protect the body against illness and death from tuberculous disease in later life. Others now feel that this first infection usually produces an allergic condition rather than an immunity, and that further infection produces disease more easily which is apt to be fatal.

This paper is a study of six hundred children who were treated in the Preventorium, Blue Ridge Sanatorium, over a period of eleven years, and presents evidence that a childhood tuberculous infection is a distinct liability and greatly endangers those infected to a relapse later from the disease, especially if they are subjected to the possibilities of re-infection.

At the time of admission to the Sanatorium the cases were worked out the best we could and classified. Those children having clinical tuberculosis were treated on the pavilions with adults, while the latent and borderline cases were placed in the Preventorium for treatment. It was difficult to classify some of the cases, especially when the physical examination was negative, the X-ray doubtful, the history questionable, and perhaps the tuberculin test negative. In our records we had some classified as latent, or suspicious, but after reviewing the data and studying the old X-ray films, we decided they should be reclassified and listed among the negative group.

A tuberculin test was done on all at the time of admission, and on about two hundred the test was repeated at the time of discharge. The intracutaneous test of Mantoux was used exclusively, 0.01 mgm. being the minimum and 1.0 mgm. the maximum dose. Old Tuberculin (O.T.) was used in

except about one hundred of the cases where Purified Protein derivative (P.P.D.) type of tuberculin was employed. Stereoscopic X-ray films were made at the time of admission, and in most instances one or more sets of films were made during residence and at the time of discharge. As would be expected, some difficulty was experienced in getting good histories, but most of the time a parent, near relative, or nurse brought the children to the Sanatorium, and a history was given by them. The period of residence in the Sanatorium was a variable factor—the so-called non-tuberculous and latent, or suspicious, cases averaged about six to eight months, while those having a definite diagnosis of tuberculosis naturally stayed longer.

The physical signs varied according to the amount of disease present in the chests. The latent group with soft, or calcified nodes in the root regions occasionally gave slight dullness and increased voice conduction over this part of the chest, but, considering the group as a whole, the signs were within the normal range. The cases with a definite diagnosis, in the majority of instances, gave definite signs. In fact, where the adult type of the disease was present, especially the fibro-caseous form, the signs were often exaggerated when compared to the X-ray findings. The early exudative cases, usually classified as minimal, for the most part gave no abnormal physical signs whatsoever. It was not unusual in this group to find children who, in addition to having what appeared to be normal chests on physical examination, had no symptoms, looked well, and on X-ray examination showed definite infiltration.

A study of the symptoms was not as a whole considered satisfactory because, unless the children were really ill, their complaints were too vague and indefinite to justify conclusions. Most of the group were underweight and had poor appetites. Another frequent complaint was fatigue on exertion. The temperature records revealed the non-tuberculous

*Read before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, Va., October 12-14, 1937.

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and latent groups to have an average daily elevation of from a half to one degree for the first four to six weeks after admission on more than 50 per cent of the cases. The positive cases had symptoms usually in proportion to the extent and severity of the disease present. All positive cases had on admission an afternoon fever ranging from 99.4° in the minimal cases to 103° in the far advanced. Next to fever in frequency were the following: Loss of weight—85 per cent; cough—78 per cent; loss of appetite—75 per cent; fatigue—72 per cent; pleurisy—48 per cent; tachycardia—40 per cent; expectoration—30 per cent; night sweats—22 per cent; lassitude—21 per cent; hemorrhage—20 per cent; frequent colds—20 per cent; "indigestion"—18 per cent; and dyspnoea—10 per cent. The symptoms produced in positive cases of childhood tuberculosis are usually more pronounced than in a similar group of adult cases.

Three tables are presented which deal with data collected on the children at the time of admission, during their stay in the Sanatorium, and at the time of discharge. The first table shows the grouping of the children into five classes, or stages, according to the findings in the chests. Contact histories and results of tuberculin tests are also listed. Tubercle bacilli were found in the sputum of 20.8 per cent of the cases with a positive diagnosis, and all of these were either moderately advanced or far advanced. Had stomach washings been made and the mucus obtained examined for acid-fast bacilli, doubtless many more would have been found. All of those classified as non-tuberculous had negative tuberculin tests and negative contact histories.

Table II is on weights and shows that 90.5 per cent of the children gained a total of 10,142 pounds as compared to thirteen, or 2.1 per cent who lost

a total of seventy-seven pounds. A few children were listed as having stationary weights, and some as not having been weighed. The positively diagnosed children as a whole showed a higher average gain than the non-tuberculous and latent groups because they remained in the Sanatorium longer.

The condition on discharge is listed under Table III. The "untreated" column of thirteen children includes a group remaining not more than thirty days, and, according to the standards established by the National Tuberculosis Association, have to be recorded as "untreated". Also, these standards will not permit children with a classification of suspicious, or latent and non-tuberculous, to be more than improved on discharge. Three in this table died in the Sanatorium—one moderately advanced (death due to complications), and two were far advanced. Thirteen were unimproved, and in this group four non-tuberculous are listed: three lung abscesses and one Hodgkin's disease. The remaining five hundred and seventy-three cases, or 95.5 per cent were improved.

A questionnaire was sent to all discharged children in an attempt to find out the present state of their health, but only two hundred and seventy-seven, or 46.2 per cent, were located for a report. Table IV contains this information.

Table V shows the results of comparison of X-ray films of eighty-eight children, averaging in time five years after discharge. This table is valuable since the opportunity has been afforded of studying serial roentgenograms of the chests of these children after discharge from the Sanatorium. The films were obtained principally from two sources: some of the children had returned to the Sanatorium periodically for examination, at which time films were made; and others were taken in the field by the chest clini-

TABLE I.—GENERAL INFORMATION ON THE CHILDREN WHILE UNDER TREATMENT

| Stage | No. | Average Age Yrs. | SEX | | SPUTUM | | | LOCATION | | CONTACT | | TUBERCULIN TEST | | |
|----------------------|-----|------------------|-----|-----|--------|------|-------|----------|-------|---------|------|-----------------|------|----------|
| | | | M | F | Pos. | Neg. | N. E. | Urban | Rural | Pos. | Neg. | Pos. | Neg. | Not Done |
| Non-Tuberculous... | 125 | 10 | 55 | 70 | 0 | 3 | 122 | 73 | 52 | 0 | 125 | 0 | 125 | 0 |
| Suspicious or Latent | 360 | 10.4 | 156 | 204 | 0 | 10 | 350 | 204 | 156 | 262 | 98 | 267 | 93 | 0 |
| Minimal..... | 77 | 10 | 39 | 38 | 0 | 9 | 68 | 43 | 34 | 63 | 14 | 55 | 3 | 19 |
| Moderately | | | | | | | | | | | | | | |
| Advanced..... | 19 | 13.6 | 7 | 12 | 6 | 4 | 9 | 14 | 5 | 17 | 2 | 10 | 1 | 8 |
| Far Advanced..... | 19 | 12.6 | 9 | 10 | 18 | 1 | 0 | 8 | 11 | 17 | 2 | 7 | 0 | 12 |
| Total..... | 600 | 11.3 | 275 | 325 | 24 | 27 | 549 | 342 | 258 | 359 | 241 | 339 | 222 | 39 |

TABLE II.—WEIGHT RECORD WHILE IN SANATORIUM

| Stage | No. | Gain | Loss | Stationary | Not Weighed | Total Pounds Gained | Total Pounds Lost | Average Gain Pounds |
|--------------------------|-----|------|------|------------|-------------|---------------------|-------------------|---------------------|
| Non-Tuberculous.... | 125 | 119 | 4 | 0 | 2 | 1,999 | 12 | 16 |
| Suspicious or Latent. | 360 | 353 | 3 | 2 | 2 | 5,918 | 7 | 17.6 |
| Minimal..... | 77 | 74 | 1 | 2 | 0 | 1,650 | 2 | 22.3 |
| Moderately Advanced..... | 19 | 16 | 1 | 1 | 1 | 384 | 5 | 24 |
| Far Advanced..... | 19 | 12 | 4 | 0 | 3 | 191 | 51 | 16 |
| Total..... | 600 | 574 | 13 | 5 | 8 | 10,142 | 77 | 18.8 |

Children classified as Non-Tuberculous or Latent remained in Preventorium an average of 6 to 8 months; Minimal cases 8 to 12 months; and Moderate and Far Advanced cases 1 to 3 years.

cians, and through the courtesy of the State Department of Health they were made available for our study. In some instances as many as four or five serial sets of films had been taken. Thus a true conception was obtained of the pathologic changes which had developed during this period and the proper evaluation placed on them rather than to have to depend on the symptoms, physical signs and clinical course, which are so often deceptive in this class of patients. An X-ray classification is made according to the type of lesion found, which is as follows: (1) Calcium confined to the lymph nodes in the root zone and paratracheal region; (2) Calcium seen only in the parenchyma of the lungs; (3) Calcium found in both root zone and parenchyma; (4) Questionable calcium seen anywhere; (5) Definite exudate in the parenchyma without calcium seen anywhere; (6) Chest negative—no changes noted which may be considered abnormal. Had oblique and lateral films been taken no doubt some would have shown calcium in the deep root zones and mediastinum which was not detected in the routine postero-anterior position. Some of the cases were difficult to place in any group of this classification on account of the over-lapping of the type of lesions. However, a satisfactory grouping is believed to have been made by placing the cases

in the table according to the predominance and type of the lesions. Mention should be made of some of the cases which had soft nodes that had not calcified when the first films were made; also, some were enlarged and had flakes of calcium interspersing lighter areas of caseation—so-called caseo-calcareous nodes. Obviously glands of this type are unhealed and active, and were so considered in the classification.

DISCUSSION

From the 277 (46.2 per cent) children located for a report it was found twenty-five had relapsed since discharge. These were as follows: two in the non-tuberculous group, six in the latent group, five in the minimal, four, or 36.3 per cent of the moderately advanced group, and eight, or 72.7 per cent in the far advanced. The fifty-nine cases heard from with a definite diagnosis of tuberculosis had 30 per cent relapses, as compared to 3.6 per cent heard from with a questionable diagnosis. From this it is noted, all things being equal, that a child with a definitely active tuberculosis is ten times more apt to relapse after treatment than one with a latent case. Also, if the child is classified as moderate or far advanced, the chances for relapse are about one out of three.

The children reporting they were either working

TABLE III.—CONDITION ON DISCHARGE FROM SANATORIUM

| Stage | No. | Arrested | Appt. Arrested | Quiescent | Improved | Unimproved | Died | "Untreated" |
|---------------------------|-----|----------|----------------|-----------|----------|------------|------|-------------|
| Non-Tuberculous..... | 125 | 0 | 0 | 0 | 116 | 4 | 0 | 5 |
| Suspicious or Latent..... | 360 | 0 | 0 | 0 | 357 | 0 | 0 | 3 |
| Minimal..... | 77 | 20 | 8 | 30 | 15 | 1 | 0 | 3 |
| Moderately Advanced..... | 19 | 3 | 3 | 6 | 6 | 0 | 1 | 0 |
| Far Advanced..... | 19 | 0 | 0 | 1 | 8 | 8 | 2 | 0 |
| Total..... | 600 | 23 | 11 | 37 | 502 | 13 | 3 | 11 |

or in school are considered well in the table, although a few stated they rested after school or after work hours. In this well group 243, or 87.4 per cent, are listed, and again it is seen that the highest per cent considered well are not among the positive cases, but in the latent class. Surely our former belief is here sustained that a child with a definitely active tuberculosis almost invariably has a bad prognosis.

Fifty-five children admitted returning home to a source of further contact, and doubtless many more did but left the question unanswered. It is noteworthy that all of the cases which relapsed came from this group of home contacts. Two children who relapsed in the non-tuberculous class, and whose tuberculin tests were negative while in the Sanatorium also returned home to contact, and at the clinic they attended the tuberculin test was found to be positive and the X-ray films of their chests revealed tuberculous exudates.

In some instances where there was a negative contact history on admission to the Sanatorium, the X-ray showed no signs of infection. In some of the children with negative tuberculin tests definite evidence of old infection was present on X-ray, and on studying the histories it was found that the contact had been broken for a considerable period of time. It is assumed that these cases had not taken tubercle bacilli into their bodies for some time, and as result of this, allergy for the bacillus had been lost and negative tuberculin tests were the result. A few of the tuberculin tests were negative on admission to the Sanatorium due to fever, and after the fever had subsided were found on retesting to be positive.

There was a decided increase in incidence of positive reactors to the tuberculin test with the increase in ages of the children; about two-thirds of the positive tests were between the ages of ten and fifteen years. This only confirms what has been found by others working on this problem. Chadwick and Zack¹ plotted the percentage curve of tuberculin reactors according to age on 42,071 school children routinely examined in Massachusetts. At the age of five years only 20 per cent were positive, while at the age of fifteen 35 per cent gave a positive test. In their school work there was, in addition to an increase in reactors with advance in age, an increase in positive tests in those children coming from homes where tuberculosis existed.

TABLE IV.—FOLLOW-UP REPORT ON CHILDREN FORMERLY TREATED IN THE SANATORIUM
Two Hundred and Seventy-Seven Questionnaires Returned

| Stage | No. Heard From | TUBERCULIN | | | | RETURNED HOME TO CONTACT | | | WEIGHT | | | PRESENT CONDITION | | | | |
|---------------------------|----------------------|---------------|------|------|-------------|-----------------------------|-----|-------------|--------|------|-------------|-------------------|--------|---------|----------|------|
| | | Tests Done | Pos. | Neg. | Not Done | Yes | No | Not Ans. | Gain | Loss | Not Ans. | Well | | Resting | Relapsed | Dead |
| | | | | | | | | | | | | Work | School | | | |
| Non-Tuberculous..... | 54 | 10 | 2 | 8 | 44 | 7 | 44 | 3 | 49 | 4 | 1 | 16 | 36 | 2 | 2 | 0 |
| Suspicious or Latent..... | 164 | 34 | 15 | 19 | 130 | 24 | 125 | 15 | 139 | 10 | 15 | 44 | 111 | 3 | 6 | 3 |
| Minimal..... | 37 | 16 | 14 | 2 | 21 | 12 | 21 | 4 | 32 | 5 | 0 | 13 | 15 | 4 | 5 | 1 |
| Moderately Advanced..... | 11 | 3 | 3 | 0 | 8 | 5 | 3 | 3 | 3 | 8 | 0 | 4 | 1 | 3 | 4 | 1 |
| Far Advanced..... | 11 | 0 | 0 | 0 | 11 | 7 | 2 | 2 | 5 | 6 | 0 | 2 | 1 | 5 | 8 | 3 |
| Total..... | 277 | 63 | 34 | 29 | 214 | 55 | 195 | 27 | 228 | 33 | 15 | 79 | 164 | 17 | 25 | 8 |

Note: All data given above is on cases since discharge.

TABLE V.—RESULTS OF COMPARISON OF X-RAY FILMS OF A GROUP OF CHILDREN TAKEN ONE TO ELEVEN YEARS AFTER DISCHARGE
X-Ray Classification of Lesions, Comparison of Tuberculin Tests, and Contact Before and After Treatment

| Type of Lesion | No. Cases | CHANGE IN LESION | | | | TUBERCULIN TESTS | | | | | CONTACT | | | | PRESENT CONDITION | | | | | |
|---|-----------|------------------|------------|---------|---------|------------------|------|------|-----------------|----------|---------|------------------|-----|-----------------|-------------------|------|----|---|-----------|----------|
| | | More Ca. | Ca. Harder | Exudate | | In San | | | Since Discharge | | | Before Treatment | | After Treatment | | Well | | | Re-lapsed | Not Ans. |
| | | | | Less | Develop | Pos. | Neg. | Pos. | Neg. | Not Done | Yes | No | Yes | No | School | Work | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| Root Zone and Tracheal Calcium..... | 38 | 18 | 20 | 6 | 5 | 35 | 4 | 10 | 8 | 17 | | 36 | 2 | 15 | 20 | 20 | 10 | 5 | 3 | |
| Calcium in Parenchyma Only.. | 4 | 0 | 4 | 0 | 0 | 2 | 2 | 0 | 1 | 2 | | 4 | 0 | 1 | 2 | 2 | 1 | 0 | 1 | |
| Calcium in Both Root Zones and Parenchyma*..... | 25 | 13 | 12 | 3 | 1 | 22 | 3 | 7 | 6 | 4 | | 23 | 2 | 8 | 9 | 11 | 5 | 1 | 8 | |
| Questionable Calcium in Chest Anywhere..... | 9 | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 4 | 4 | | 1 | 8 | 0 | 8 | 8 | 0 | 0 | 1 | |
| Exudate Only..... | 5 | 1 | 0 | 3 | 2 | 5 | 0 | 1 | 1 | 3 | | 5 | 0 | 2 | 3 | 3 | 0 | 2 | 0 | |
| Negative..... | 7 | 2 | 0 | 0 | 0 | 0 | 7 | 2 | 3 | 0 | | 2 | 5 | 3 | 3 | 5 | 0 | 1 | 1 | |
| Total..... | 88 | 34 | 36 | 12 | 8 | 65 | 23 | 20 | 23 | 31 | | 71 | 17 | 29 | 45 | 49 | 16 | 9 | 14 | |

*Three pleurisy with effusion cases are included in this group.
Average period between films for entire group is five years.

In the table of eighty-eight children on which serial stereoscopic roentgenograms were available for interpretation and comparison, an opportunity was given to study the type and extent of pathology in the chests and in general to learn more about the cases than was available in the material listed in Table IV. In the returned questionnaires seventy-four, or 84 per cent, of this group were included, and 87.8 per cent were considered well and 12.2 per cent had relapsed. The largest number of relapses occurred in the children grouped under calcium found in the root zone and paratracheal regions. Also, more exudate developed in this class and was responsible for 55 per cent, or five of the nine cases requiring treatment again. Most of the exudative cases followed on the serial films resembled the re-infection form of adult tuberculosis by beginning in the subclavicular areas, usually in the region of the first and second interspaces, and from there spread into the apices. It is believed from the study made on the children in this group that the exudative form of tuberculosis, especially if it is the re-infection type, is usually of a more serious nature, and close supervision and prolonged treatment are necessary if a high mortality is to be avoided.

Rathbun² did some excellent work on childhood tuberculosis with results similar to what we have found. He made a survey of a large group of adolescent children with definite pulmonary tuberculosis, and found that 70 per cent of the group on serial X-ray films had evidence of tracheobronchial lymph node disease which had been present from childhood. No mention, however, is made of the number of cases which developed disease in those with calcium in the parenchyma of the lungs.

In discussing the significance of tuberculous lesions, Hetherington³ has this to say: "Calcification of the tracheobronchial lymph nodes recognizable in chest films of children indicates heavy exposure to tuberculosis earlier in life, and a second exposure to the disease from a new source of contagion is likely to produce disease." In the group of cases which he reports with active disease 27 per cent had calcium in the root zone and the exudative areas noted were first subapical in location, later spreading into the apex. This work corresponds favorably with what we have to report, except he had a larger per cent of children with tracheobronchial infection which later developed exudative

lesions and relapsed than we had—our's being only 13.2 per cent, or about half the number Hetherington lists.

The cases with calcium in the root zone and parenchyma numbered twenty-five, and seemed as a whole to do well after discharge, as only one relapsed. Three cases of pleurisy with effusion were found in the entire group of six hundred, and it is significant that they all occurred under this heading. Two of the cases had the effusion on admission to the Sanatorium, and made good recoveries and are now in school. The other case developed at home after returning to a source of intimate contact with an "open" case, and is now resting and is listed above as relapsed.

Before concluding this paper, it is eminently necessary to determine just what evaluation, if any, should be placed on this work. Was preventorium treatment beneficial to this group of children is the question which requires consideration and, if possible, an answer. Unfortunately we have no controls who did not have preventorium treatment for comparison, and on this account it is difficult to draw any definite conclusions. However, the separation of these children from the sources of infection in the home is believed to be an outstanding factor in the treatment. It will be recalled that 60 per cent of the entire group treated gave a history of contact on admission to the Sanatorium, and 92.4 per cent of those with a positive diagnosis stated there were one or more "open" cases of tuberculosis in their homes.

The training received in personal hygiene and tuberculosis prophylaxis is believed to be of lasting benefit. The gain in weight and growth and development which occurred in nine out of every ten children is also considered valuable. The follow-up work on the discharges which revealed 87.4 per cent of those heard from as well, and either in school or working speaks for the value of the work.

There is, however, one phase of the work which is alarming and which should be corrected insofar as it is feasible to do so; and that is the necessary steps should be taken to prevent re-infection on returning home. About 20 per cent of the children who returned their questionnaires stated they had returned home to a further source of infection, and all of the cases, as noted above which relapsed after treatment, were included in this group. This fact is of sufficient magnitude to warrant investigation

of home conditions of all the children when they are ready to be discharged from the preventorium.

Opie,⁴ writing on tuberculous re-infection, has this to say: "In my experience calcified nodes in the chest signify tuberculous infection and have been followed by the adult type of tuberculosis only when there has been continued contact with 'open' disease."

Hawes⁵ followed a group of 712 children after discharge from the preventorium over a period of ten years, and found 109 who had returned to homes where the original sources of infection had not been eliminated and all were apparently doing as well as the other group in which the "contacts" had been removed. He states: "The only reason I can see for this must be the training and education given these patients and other members of their family by our own workers. This to me shows plainly the value of preventorium work carried on outside the institution. Infected children need training and education—the preventorium or its equivalent is the best means of doing this."

SUMMARY

1. A follow-up study made on six hundred children discharged from the Preventorium shows that all of the relapses after treatment had returned home to further contact with active tuberculosis. This definitely shows the great importance of breaking the contact with the tubercle bacillus in children who have been previously infected.

2. The amount of tuberculous infection present has a definite bearing on prognosis as shown by the fact that only 3.6 per cent of the latent cases relapsed as compared to 30 per cent of the cases with a definite diagnosis of tuberculosis. Thus the incidence of relapse may be fairly accurately estimated on the amount of demonstrable tuberculous infection and disease present, and the probability of further infection by contact with an "open" case.

3. On discharge 95.5 per cent of the children were definitely improved, and 90.5 per cent had made an average gain in weight of 18.8 pounds.

4. Of the children located for a report after discharge, 87.4 per cent were considered well and either going to school or working.

5. On the basis of the results of the work here reported it is believed that preventorium treatment is of definite value to those children who have tuberculosis, especially the latent form of the disease.

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DISCUSSION

DR. L. T. ROYSTER, University: This study of tuberculosis in children as reported by Dr. Stafford and his co-workers from the Blue Ridge Preventorium furnishes a good survey of the class of cases that come to the attention of physicians in this state, and it is such studies as this from which we acquire, more or less, definite information that will help us in the fight to combat this disease.

I think that Dr. Stafford has attempted to make too many classifications and am extremely doubtful if such classifications can be followed in appraising a case and if it can be of any great practical use. There are so many phases of the tuberculosis problem, especially as relates to the difference in the manifestation of this disease in childhood and in adult life, that it is difficult to discuss the matter in the few moments allotted to the discussion in this meeting. In spite of the fact that the outstanding and perhaps the most important phases of tuberculosis in childhood are agreed upon, there still remain certain differences in opinion among those most widely experienced which will and must be cleared up in time. From a practical point of view, some of these differences are not important in relation to the handling of the individual case, and yet it is possible that when they are cleared up, or at least coordinated, they may prove to be of definite importance.

So far as first infection goes, it is extremely doubtful if a diagnosis can be made by physical examination alone. I think it is safe to say that the only reliable diagnostic criteria are the tuberculin test and X-ray. The tuberculin test shows sensitization due to the presence of infection; it does not locate the lesion. The X-ray tells us in most instances where the infection lies and the extent of the lesion. The final proof—the finding of bacilli—is difficult to obtain, and even where the case is non-productive, bacilli are not infrequently found by means of gastric lavage.

It has been shown that up to adolescence, children are usually able to survive and in many instances overcome first infections; however, during the course of the first infections metastatic lesions are developing, and it must be borne in mind that among these metastatic lesions may be placed tuberculous meningitis, which is almost always a metastasis of the first infection.

A positive tuberculin test indicating sensitization to the first infection appears usually within two or three weeks from the establishment of the first infection, but if the positive reaction is longer than six months it is almost certain that we are dealing with a second infection type.

There can be no doubt that second infections occur from contact with open cases discharging large numbers of virulent bacilli, especially where the child has been in another environment for treatment and is returned to the active tuberculous milieu. However much we may realize that a second infection may be from either exogenous or endogenous sources, it is pretty certain that the vast majority of second type cases develop either as a result of endogenous infection from the primary focus or from endogenous infection from a secondary focus acquired as a metastasis during the course of the primary lesion, and I think it is quite safe to say in the large majority, opinion on this subject is that no benefit can be derived from first infection.

This brings me to my concluding remarks: First and most important is the prevention of any infection. Means to accomplish this are not yet within our control. It is to my mind a serious question whether sanatorium or preventorium treatment in first infection is of sufficient advantage to justify the necessary expense. The second thought is one which I want to stress very strongly, and is one which I have emphasized over a number of years and so far as I know I am the first person to emphasize it: this is that the only way to further reduce the present incidence of tuberculosis is through systematic tuberculin tests on all school children and all pre-school children where possible, with a subsequent check of the families of those proving positive reactors. I believe that money spent in this direction will redound to the elimination of this disease as no other method yet devised can do.

DR. WM. B. McILWAINE, Petersburg: I think we should be very much pleased with Dr. Stafford's presentation. It certainly brings to our minds the fact that we CAN diagnose tuberculosis in childhood, and therefore we have a chance of making these cases practically immune in adult life if we follow along simple lines. I think this paper is excellent and one that should be taken advantage of in our practice.

I want to ask Dr. Stafford two or three questions: In the first place, I think the term "relapse" is a little too loosely applied. Dr. Royster's discussion, however, brought out the point I wanted to ask Dr. Stafford to refer to in his closing discussion; that is, whether he considers these relapses due to re-infection in the home from an open case or whether it is due to lack of rest and the environment of the home from which the child came in the first place makes the child relapse because the lesion had not been entirely healed in the preventorium or sanatorium. Do we have re-infections in tuberculosis, or do we have relapses? It has been a question in medical circles for some time whether we have re-infections or have relapses.

Next, did Dr. Stafford take into account in his histories of 600 cases the bovine tuberculosis? I personally have the feeling that in Virginia bovine tuberculosis is exceedingly rare. I have felt for some time that tuberculosis

among children is due to infection from adults and is not bovine tuberculosis.

Next, what percentage of cases treated in a preventorium have died of the miliary form of tuberculosis or from tuberculous meningitis? I think that would give us the end-results of preventorium treatment. If he has a very low percentage dying from those two causes, whereas in private practice we have a large percentage, then it is an argument in favor of preventorium treatment.

I should also like to ask Dr. Stafford how many cases show involvement in other parts of the body, particularly the cervical glands? As you know, involvement of the cervical glands has been considered very, very common, whereas in my experience it is rare. I think the first appearance of tuberculosis in the child is in the chest rather than in the cervical glands.

All these points are practical, and I hope that Dr. Stafford will discuss them in his closing remarks.

DR. CHARLES SCOTT, State Department of Health, Richmond: I should like to thank Dr. Stafford for his valuable contribution to our knowledge of childhood tuberculosis. There is only one point I wish to discuss, and that is the control of contacts in the home. We have been stressing this, and we feel that the majority of our active cases of tuberculosis in children—or practically all of them—give a history of known contact in the home. I think the whole tuberculosis control program is built around this one factor, and that is the open contact case in the home. It is true that our modern treatment of tuberculosis greatly prolongs the life of the moderately or far advanced case of tuberculosis, but there has not been any appreciable reduction in the mortality of known moderately or far advanced cases. The majority of the reduction in tuberculosis has been in the prevention of infection, and I am glad to see (in some of my fields) that the general practitioners are doing tuberculin tests. I think that it is a valuable procedure if properly administered and interpreted, and if physicians will do what has been brought out so forcefully here this afternoon, i. e., if they will X-ray all tuberculin reactors and will examine and X-ray all the contacts in the homes, whether sick or not, they will unearth a great many cases of tuberculosis.

Another factor that is just as important, or more so, is that the practitioners should, whenever they find a case of tuberculosis in their practice, make an effort to examine every member of that household, from the grandparent down to the servants, and make X-ray examinations of their chests. As a matter of fact, the majority of early cases of tuberculosis all over the country have been found by this procedure.

I should like to ask Dr. Stafford one question: How often do you feel that these children with latent cases of tuberculosis should be X-rayed? We feel that they should be X-rayed yearly, if possible, or more often if there is active or an appreciable amount of pathology.

DR. CLAIBORNE T. JONES, Petersburg: The program outlined in the remarks of the gentleman who last spoke would be fine; but the economic condition in our State, it seems to me, absolutely precludes carrying out such a program as he mentions unless we had some contribution

from the State to aid us in that. I might say that in my practice not one family in a hundred could stand the expense of X-ray examination of all members of the family. It sounds mighty good; but I do not see how it could be done, to save my life.

I should like Dr. Stafford to give us some idea on the separation of these children when they come back from the sanatorium. I have one now that is to be sent back to me. The contact is the grandmother. I do not know what to do. The mother's sister does not want the grandmother. The family that have her do not want her, but they cannot get rid of her.

DR. G. F. SIMPSON, Purcellville: It is not customary for the chairman of any meeting to discuss a paper, but I do want to ask Dr. Stafford to put one thought into the minds of the profession. I am quite sure that if we had the statistics of the general men practicing in the State of Virginia we would find that most of our cases of childhood tuberculosis are due to the fact that some adult in the home has tuberculosis. I remember many years ago, when we first started Catawba Sanatorium, I had six adult cases of active tuberculosis and one child that had an arrested or latent lesion, not diagnosed by X-ray or anything of that kind but by positive sputum examination. I had the State man come to the county and go over these cases. The funds were not sufficient to send them to the sanatorium, and they were accepting only incipient cases. Four cases of childhood tuberculosis came out of those six families. I see every year of my life some adult sent home from some institution, improved or arrested. A patient of mine who was in Catawba, because he got peevish or something of the kind, went home. He had tuberculosis, but they could not keep him if he did not want to stay. He had a wife and six children. Some weeks ago they appealed to me to do something to get him in a sanatorium, because the farm that he rented had been sold and nobody would rent them another one while he had an active case of tuberculosis. It took me six weeks to get that patient into the sanatorium. I am strongly impressed with the idea that the thing we want, and that is important in control, is provision for the care of the active (I might say incurable) cases of tuberculosis, so that they will not be returned to the community or to the home to reinfect others. I think that is a very important thing for us, as physicians, to think about.

DR. STAFFORD, closing the discussion: I want to thank these gentlemen for their very generous discussions of this paper. One question has come up which is almost universal whenever tuberculosis is mentioned, especially the childhood type, and that is in reference to re-infection. I do not know of anything that is any more controversial right now than whether or not patients who develop clinical tuberculosis have done so as result of the first infection (primary infection), or whether re-infection—either exogenous or endogenous—has taken place in the production of clinical disease. According to the best authorities, the first infection lesions in children are usually not disabling, that is, they may not produce symptoms, and the child so affected may entirely overcome this, and the true condition may never be detected unless X-ray films of the

chest are made. But if the contact is continued, and if re-infection is permitted, then the reinfectious process will soon overwhelm the child, and clinical tuberculosis is the result.

In the discussions the question has been asked, What should be done about these cases with primary infection? It is indeed a difficult problem to decide. We have reported here six hundred cases which had preventorium treatment, and almost half of them were located and follow-up reports gotten on them from one to ten years after discharge. Twenty-five had relapsed, and all of the relapses had returned home to further exposure to active cases of tuberculosis. Some of the relapses were no doubt due to poor living conditions at home, causing a reactivation of the old infection. Dr. Hawes, of Boston, has partly solved the problem of reinfection in this way: He has a regular group of field workers—nurses and social workers—employed, and when a child breaks down and is sent to the Preventorium for treatment, these workers go into the home and search for and isolate the "open" cases. Then, when the children are ready to leave the Preventorium and return home, the contact and further infection is no longer there.

Dr. McIlwaine asked how many of these cases were due to the bovine and how many to the human strain of the tubercle bacillus. There are, of course, certain cultural and morphological characteristics which differentiate the two, but we had no means of determining these.

The question has come up as to how many of these cases died of military tuberculosis or tuberculous meningitis. The three deaths which occurred in the Sanatorium were all of the fibro-caseous, or adult type of tuberculosis. The returned questionnaires were not very satisfactory in this respect, and there may have been some of the eight deaths since discharge from the Preventorium that were due to these causes. In the sanatorium we have had only one case of military tuberculosis to develop in a child over a period of several years.

In regard to how many of these children had the complication of tuberculous cervical adenitis, it may be said that out of the six hundred, there were only four or five, or less than 1 per cent, that we could say definitely had tuberculous infection of the glands. A great many more children than that came in with enlarged glands in the neck, but usually there was some other form of infection in the upper respiratory tract responsible for these changes, and when this complication was corrected the glands were reduced in size.

Dr. McIlwaine has asked how often these latent cases should be X-rayed. At least twice a year, or every six months for a period of two or three years. If at the end of two or three years they are doing satisfactorily, then once a year would be sufficient. However, no general rule can be laid down because this is an individual problem. There may be conditions in the home that will require checking up the child oftener than every six months.

Dr. Simpson brought out a very important point, and it is one that bothers us considerably. We have adult cases come to the Sanatorium with "open" tuberculosis, and we know that they are a menace from the standpoint

of spreading the infection to the community in which they live, and certainly to the people in their homes. But we have no police control over them, and if they refuse to listen to reason and say they are going home, there is really no way we can stop them. If they are forced to stay unwillingly, they are often a disturbing factor to the other patients. These cases should be isolated to prevent spreading tuberculosis and should not go back to their

homes. Usually they have not stayed in the Sanatorium long enough to learn the proper precautions and do not know how to prevent infecting other people. We have many problems of this nature with certain classes of patients. The State Farm is probably the solution to this situation, and we have been recommending that obstreperous cases be sent there.

TWELVE YEARS' EXPERIENCE WITH IODIZED OIL.

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and
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Richmond, Virginia

In 1933 we reported our results on the treatment of one hundred and forty-two patients with intratracheal injections of iodized oil. Since this report we have used iodized oil intratracheally on an additional four hundred and sixty individuals. Within a period of twelve years these six hundred odd patients have received more than ten thousand injections. In many severe sub-acute and chronic infections involving the tracheobronchial tree such as bronchitis, bronchiectasis and intractable bronchial asthma, treatment with intratracheal injections of iodized oil will often afford relief when the usual measures have failed. We recognize that this procedure is not without some risk, but we believe the dangers attending its proper use have been over-emphasized.

It is now generally known that iodized oil is a compound of iodine and a vegetable oil, usually poppy seed or sesame oil, and sometimes peanut oil. The simple neutral vegetable oils are used because it is found that they are non-irritating to the tracheobronchial tree. Pinkerton, working with experimental animals, injected various oils intratracheally and studied the effect of these oils on the tracheobronchial tree and lung. As the result of this work he states that the simple neutral vegetable oils produce no reaction and do not appear to injure the lungs in any way. They appear to be removed from the lung entirely by expectoration. He concludes further that mineral oils are emulsified and taken up by phagocytic cells in the aveoli and consolidation of the lung is produced. Giant cell formation and fibrosis are also evident as early as the second month after mineral oils are injected. Because of this, the practice among some physicians of diluting iodized

oil with mineral oil should be discouraged. Unfortunately, many physicians confuse mineral with vegetable oils and because of this are skeptical about the usefulness of iodized oils.

Since iodized oil is not a mixture of iodine and an oil, but a true compound necessitating a careful chemical balance in which the iodine is part of the molecule, there is no free iodine present unless the oil has deteriorated. Any deterioration with the liberation of free iodine is readily recognized by the change in color and turbidity of the oil. Should the oil turn dark or become turbid it should not be used since deteriorated oil contains free iodine and is irritating to the tracheobronchial mucosa.

Iodized oils were first prepared more than eighty years ago. Personne in 1856 compounded a true iodized oil when he succeeded in making oil of almond absorb 5 per cent of iodine. In 1896 Winternitz introduced into therapy a chloro-iodized oil under the trade name "Iodipin". Lafay in 1901 prepared the first purely iodized oil.

Olive oil is not widely used in the tracheobronchial tree, although it was one of the first vegetable oils used for intratracheal injections. Osler used a solution of olive oil eighty-eight parts, menthol ten parts and guaiacol two parts in the treatment of bronchiectasis. He recommended as still better the addition of iodoform to olive oil, especially where the odor was offensive. Of this substance he injected into the trachea one dram once or twice daily as indicated.

Prior to 1921, iodized oils had been used only therapeutically and in that year Sicard, Forestier and Leroux succeeded in outlining the tracheobronchial tree by injecting lipiodol into the trachea.

They reported obtaining beautiful X-ray pictures of the tracheobronchial tree without harmful effect to the patient. This climaxed numerous attempts by different investigators at lung mapping, and the value of lipiodol as a diagnostic measure was soon established. Although iodized oil may be of diagnostic value in any obscure condition of the lungs or tracheobronchial tree, especially where the lung field is obscured by pleural thickening, atelectasis or fibrosis, it is of particular value in delineating a distorted, dilated, narrowed or occluded bronchus. Frequently it is the only method by which we can prove or disprove the presence or closure of a lung cavity. In outlining pleural fistulous tracts and in determining the presence of lung cysts, the oil is injected directly into the fistula, pleura or cyst, and we know of no other way to obtain such information. For diagnosis we prefer the heavier oil and find the 40 per cent lipiodol very satisfactory. Its greater viscosity and high iodine content make it more suitable for diagnostic purposes. As a therapeutic measure, however, we prefer a lighter oil which is lower in iodine content and is less viscous and which we believe makes a more satisfactory preparation for therapy. Because of its greater fluidity it is much more easily administered.

We feel that the successful use of iodized oil in the tracheobronchial tree requires both care and discretion despite the reported harmless use of the oils in practically all of the body cavities, soft tissues and even in the blood stream. Its indiscriminate use in diagnosis or treatment is not justified. It is our practice to examine every patient including X-rays of the chest before administering the oil since this substance is radio-opaque and may otherwise confuse the picture or lead to an erroneous diagnosis.

Contraindications for the use of iodized oils in our experience are few, but definite. They are: 1. Debilitated patients where the risk is greater than any possible good that might be accomplished either in diagnosis or treatment. 2. Acute active tuberculosis. 3. Idiosyncrasy to iodides.

With the first group, debilitated patients, we have had but little experience, although we have given the oil to patients with severe bronchial asthma without harmful results. We have also given it to patients with cardiac decompensation who had an accompanying bronchitis with uncontrolled cough. Our results in the treatment of these cases have been very encouraging. In our experience with more than six

hundred patients to whom we have given the oil, in only five has a lesion of undetermined origin later proven to be tuberculous. So far as we have been able to determine, no harm was done these patients and the tuberculous lesions were not unfavorably influenced by the oil. Amberson and Riggins have well pointed out the dangers attending the use of iodized oil in acute active tuberculosis as well as in acute lung abscess and pneumonia. It is generally agreed that acute active tuberculosis contraindicates the use of iodized oil and we have had no occasion to use it in these cases. We have, however, given the oil to many patients with a chronic fibroid tuberculous process without ill-effects and find it useful as a diagnostic procedure in patients who have had a thoracoplasty and in other patients where the lung field is obscured as the result of pleural thickening, atelactasis or fibrosis. In such cases by outlining the tracheobronchial tree it is often the only method of determining the closure of cavities and the presence of bronchial dilatation. Its value and relative harmlessness in such cases has been adequately demonstrated by Murphy, Neuhof, Potter and Pagliughi. Potter and Pagliughi in a subsequent paper have reported the use of lipiodol in one hundred and eighty tuberculous patients without harmful results. They state, "Further proof of the importance of avoiding the introduction of lipiodol in exudative lesions lies in the fact that, in our series of one hundred and eighty cases, we have not met with a single instance of aggravation of a previously existing process or of dissemination to other parts of the lung as shown by serial roentgenograms during a period of several months to two years following bronchographic studies." They further quote Mandelbaum as follows: "I, myself, have bronchoscope and injected over ninety tuberculous patients, having given in all two hundred and fifty injections without any serious sequela. This was due to the fact that my cases were carefully selected as were yours."

In only ten patients have we observed symptoms of iodism. Four of these had slight swelling of the salivary glands with increase in saliva and metallic taste. In these, symptoms lasted only for a few days and did not recur following subsequent injections of the oil. Two patients have shown mild skin manifestations of iodism, without systemic symptoms, which cleared up within a few days. In four patients we have encountered reactions which we

have classified as severe. Three of these had laryngeal edema which responded well to adrenalin and which lasted only a few hours. The fourth patient had an urticaria which lasted for several days and was quite troublesome. There was no history of idiosyncrasy to iodides in any of these cases, but later developments proved that two of these patients were so sensitive to iodine that iodism occurred following preparation of the skin with iodine for surgical operation. In one of these four patients we have been able to continue treatments with iodized oil in small doses without further symptoms of iodism. We have had no deaths and no reactions severe enough to cause alarm. A reaction similar to that encountered in vaccine therapy with symptoms of generalized aching and chilliness followed by temporary fever occasionally occurs in some patients.

We have administered iodized oil to a few patients with a known susceptibility to iodine. We believe the greatest danger in such cases is in allowing the oil to enter the stomach either at the time of administering it or from the patient swallowing his sputum, and since failure to expectorate is a frequent habit with many patients, we caution any patient showing a bronchiectasis who denies expectoration. The oil is absorbed slowly, if at all, from the tracheobronchial tree and except in very susceptible individuals, the danger of iodism from this source is rather remote.

Numerous methods of administration have been published and several of these with modifications are practiced. We believe any method that combines safety, simplicity and certainty to be preferable. The supraglottic method which we have previously described fulfills these aims. Certain points in this method, we believe, are worthy of emphasis. This method requires no preliminary medication or preparation of the patient, no complicated apparatus and in our experience is safe. We find that spraying the pharynx with a 1 per cent solution of cocaine hydrochloride is adequate anesthesia with all patients. Many patients after the initial injection require no anesthesia for subsequent injections. Holding the tongue has been not only unnecessary but undesirable. We do, however, feel that it is important to observe the flow of oil into the larynx with the laryngeal mirror. This obviates the entrance of oil into the esophagus. The majority of patients are cooperative and find no difficulty in carrying out the instructions to keep the head still, the mouth open,

to breath naturally and not to swallow. When the oil is being given for diagnostic lung mapping, the patients is further instructed not to cough. In all other instances whether or not the patient coughs makes no great difference. A five cubic centimeter syringe is used. This perhaps consumes a little greater time than the larger syringe previously used, but the rest period while the syringe is being refilled affords the patient an opportunity for relaxation, swallowing or coughing. We experience no difficulty in introducing the oil into the desired lung area by utilizing proper posture. When desirable to outline an upper lobe this can be accomplished by placing the patient on an examining table in a semi-reclining position and lowering the head, then turning the patient on the appropriate side immediately after introducing the oil into the trachea. This procedure is simple and can be readily carried out in the office.

In addition to other routine examinations, all patients are fluoroscoped both before and after administering the oil. If fluoroscopy and the X-ray are freely used one can determine the approximate amount, location and distribution of the oil in the tracheobronchial tree, but otherwise it is impossible to know that the oil has been introduced into the desired portion of the lung. We not infrequently observe a "piston-like" action of the oil in the bronchus with a varying movement of several centimeters distance. This has been described as a peristaltic movement, but we are not convinced that this is a correct explanation. We are more inclined to believe that air is trapped in the bronchus by a mucus plug or bronchial spasm, or a combination of these factors, causing a movement of the oil toward the trachea during expiration and away from the trachea during inspiration and usually disappearing in a few seconds as the oil traverses the bronchus.

Therapeutically, we have used iodized oil in acute, sub-acute and chronic pulmonary conditions. The acute respiratory condition—tracheobronchitis—responds favorably to the oil and most patients so treated are enthusiastic because of the relief obtained. About 50 per cent of these patients have infection of the nasal accessory sinuses which necessitates local treatment. Of the chronic lung conditions, bronchitis, bronchiectasis and bronchial asthma constitute the bulk of patients who will be benefited by treatment with iodized oil. Patients with hypertrophic emphysema, pneumoconiosis, and

patients with extremely sensitive bronchial mucosa of an allergic nature have not been treated as we have not felt that the oil was indicated in the treatment of these conditions.

In the last five years we have used the oil in the treatment of two hundred and fourteen patients whose chief symptoms were asthmatic breathing. Of these two hundred and fourteen patients, one hundred and five had intractable bronchial asthma. The remaining one hundred and nine had what we classify as asthmatic bronchitis. Many of the patients in both of these groups showed evidence of bronchiectasis. Response to treatment was about the same in each of these groups and differs very little from the results obtained in patients with chronic bronchitis and bronchiectasis without asthmatic symptoms.

In 1933 we reported our experience in the treatment of one hundred and forty-two patients with iodized oil. Our results with these patients were classified as markedly improved or cured 58 per cent, slight to moderate improvement 33 per cent, and failures 9 per cent. It is interesting to note that in reviewing our subsequent experience during the past four years our results have been strikingly similar. Our complete failures, or those patients showing no favorable response, constitute approximately 9 per cent of the total number of patients. Of the group of patients seen in the past four years, 60 per cent have shown what we have considered a marked improvement or a cure. The remaining 31 per cent have shown from slight to moderate improvement. In analyzing the cases of bronchial asthma the results are comparable to those of the group as a whole, the percentage of failures being almost identical.

CONCLUSIONS

After twelve years experience with more than six hundred patients who have been given more than ten thousand intratracheal injections of iodized oil

we are convinced that the dangers attending the judicious use of this procedure have been over-emphasized. However, it should not be used indiscriminately. We have encountered ten reactions but none of these has been alarming and we have had no fatalities. We have never seen it unfavorably influence a chronic tuberculous process although we have used the oil in numerous such cases. We feel that iodized oil is an invaluable agent in the treatment as well as in the diagnostic study of various pulmonary conditions.

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801 Professional Building.

FRATERNAL COOPERATION.*

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Norfolk, Virginia

Members of the Seaboard Medical Association, visiting guests, ladies and gentlemen:

*Presidential Address delivered before the Seaboard Medical Association of Virginia and North Carolina at Virginia Beach, Va., December 7-9, 1937.

An honor was bestowed on me at Tarboro last year in choosing me as your president, for which I am deeply grateful.

The physicians of two great Sister States are

gathered together tonight with a feeling of brotherhood to endeavor to advance the science of the healing art for the benefit of suffering humanity.

Chas. Gordon Heyd, said: "The purpose of all social and medical organizations is to improve conditions under which society lives; and to make life easier in usefulness and contentment."

This Society, as indeed many medical societies, has been accused of being an advertising scheme for the benefit of a few specialists, a kind of get-together where those who are business-minded can advertise their wares. I do not see it that way. If it can make better business, if it can teach us better medicine and surgery, if it can stimulate in us greater efforts to do more for our sick and suffering patients, they may call it advertising or anything else they please. But I say this is a great educational body—with higher aims than business. To quote from the late W. F. Drewry, in his presidential address before the Medical Society of Virginia some years ago: "The profession of medicine is essentially altruistic in character." It stands for something more than the mere *science* of medicine and surgery in the treatment of disease. It stands for the prevention of disease, it teaches the laws of hygiene in all its branches, mental and moral hygiene, physical hygiene or cleanliness of the body, it teaches the laws of contagion and quarantine, cleanliness of our cities and towns and our whole country.

It teaches *Medical Ethics*, that branch which treats of the principles of good living—morality—and our duty to our fellow practitioner—in fact, our duty to all humanity.

Right now one of the principal worries we are having embraces *Medical Economics*. The recommendation made to the House of Delegates of the American Medical Association in a speech by Senator James Hamilton Lewis, of Illinois (*Jour. A. M. A.*, June 26, 1937), proposing an amendment to the Social Service Act, whereby the whole medical profession would be put under control of the Federal Government, should be pondered by every physician in the United States, and should bring the question to his own home, in order to ask himself what he should do about it. I will say in commendation of the report of the committee on Medical Economics of the Medical Society of Virginia—which committee, by the way, was headed by an ex-president of this association—that a most lucid report was

made to the society, condemning in no uncertain terms such an amendment as proposed. Needless to say this report was adopted unanimously.

Hospital and medical care of the indigent and semi-indigent sick is a function of our fraternity, and must be worked out by our profession.

These questions cannot be worked out by science alone—they are not strictly scientific questions—but by fraternal co-operation between physicians, hospital boards or management, social welfare agencies, health boards, etc., and even when necessary through State and National legislatures.

And that brings us to the subject of my paper—

FRATERNAL COOPERATION

"For the miseries of the world science is the only true remedy; it is the only true charity."

Let us go back into our history for a few minutes to show that our great scientific fraternity is not only one of the oldest but also one of the closest of all time.

It has been said: "The history of medicine is the history of mankind, and in the study of it we gain an inspiration and a hope for the future of our race." We need not go back to Aesculapius, the legendary Greek god of medicine, the son of Apollo and the nymph Coronis, whom Homer, however, speaks of only as a skilled physician, but only to Hippocrates (460-377 B. C.) believed to be either the 17th or 19th in direct descent from Aesculapius. Much of the medicine attributed to Hippocrates, it is believed, was practiced before his time, but it was collected by him and by *his school* (or society). One of the most famous writings of Hippocrates is "The Oath," and it is as alive today as when written 2,200 years ago, and by means of it the traditions in ethics are handed down to those entering our fraternity today.

I will not read the whole oath as translated from the original Greek, but as the Hippocratic Oath still plays a part in medicine worthy of emulation, Columbia University administers the following oath—which is nothing but that of Hippocrates brought down to date—to its graduates in medicine each year.

"*To the Candidates for the Degree of Doctor of Medicine.* "You do solemnly swear each man by whatever he holds most sacred, that you will be loyal to the profession of medicine and just and generous to its members; that you will lead your lives and

practice your art in up-rightness and honor; that in what so ever house you enter it shall be for the good of the sick, to the utmost of your power, you holding yourselves far aloof from wrong, from corruption from the tempting of others to vice; that you will exercise your art solely for the cure of your patients, and will give no drug, perform no operation for a criminal purpose, even if solicited, far less suggest it; that what so ever you shall see or hear of the lives of men which is not fit to be spoken, you will keep inviolably secret. These things do you swear? Let each man bow the head in sign of acquiescence. And now, if you shall be true to this, your oath, may prosperity and good repute be yours; the opposite if you shall prove yourselves forsworn."

The Hippocratic Oath is the pledge of our great fraternity. It dates back 400 years before Christ, and though subject to some minor changes it still stands as our creed.

Time will not permit me to touch even on the high points of our history down through the ages. It may be divided into five epochs or periods: 1. Pre-historic, or mythical (to 400 B. C.); 2. Greek and Roman (to 476 A. D.); 3. Medieval (to 1493); 4. Philosophical (to Pasteur, 1822); and 5. Scientific (to the present).

The chief glory of medieval history of medicine was the organization of hospitals and systematic nursing of the sick, and these had their origin in the teachings of Jesus Christ. Yes, Christianity has done more for the restoration of health than anything on earth.

And now, a word for our Association: First, the A. M. A. What is it? A federation or union of the societies of the several states. Its object: To promote the science and art of medicine and for the betterment of health. I need not go further into the State and District, nor the special societies, they all stand for the same principles.

Fraternal cooperation is the spirit of them all. With it, we can accomplish anything we want; without it, nothing.

It is apparent from these few points I have

touched on, from the dawn of medicine to the present, that it has always been an association of scientists, above politics or religious creeds, and independent in thought; knowing no country or race, but embracing all countries and all races and tongues with only one object in view—the *Search for Truth*. The whole medical world is but one great fraternity held together by the bonds of science, morality and virtue. Hippocrates required his pupils when finishing their course under him to subscribe to his oath before going out into the world to battle with disease. Columbia University and other schools of medicine have introduced the same oath. I would amplify the same oath and have the addition read as follows:

1. Make honor and duty the beacon lights to guide us over the stormy seas of time.
2. Do that which is right to do, because it is right—not for personal aggrandizement.
3. Weigh our remuneration by the circumstances by him who pays it.
4. Never consider our charity expensive if a worthy person be the receiver.
5. Do nothing for opinion's sake, but everything for conscience.
6. Be charitable to our enemies, for by doing so we often make them our friends.
7. The physician should be an outstanding citizen. He should love his country and work unselfishly for her honor, and obey her laws.
8. He should avoid inscribing his name on the transactions of his service to the poor and needy.

To quote: "He who industriously sows and reaps is a good laborer and worthy of his hire. But he who sows that which shall be reaped by others, by those who will know not of and care not for the sower, is a laborer of a nobler order, and worthy of a more excellent reward."

In choosing this profession an individual assumes an obligation to conduct himself in accord with its ideals.

Taylor Building.

PRENATAL CARE.*

T. J. WILLIAMS, M.D.,
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It is generally agreed that many maternal deaths could be prevented by adequate medical supervision. In accordance with the old adage that prevention is better than cure, premarital and preconceptional examinations are valuable and will often prevent subsequent catastrophies. It is better to have discovered certain abnormalities and disorders prior to the onset of a pregnancy, and either correct the disorder or avoid the hazard of a pregnancy. Such conditions as nephritis, hypertensive vascular disease, heart disease and tuberculosis may temporarily or permanently contraindicate pregnancy, and are preferably recognized prior to conception.

Medical supervision after the occurrence of pregnancy is in line with preventative medicine and periodic health examinations and is necessary for a considerable proportion of women if they are to avoid calamity, and is helpful to all. That it plays an important role in the reduction of maternal mortality is generally accepted and amply proven. The reports of Calvert,¹ Rothert,² Wilinsky,³ and Miles⁴ in analyzing the maternal deaths of several states show that a large percentage of mothers dying in childbirth had no prenatal supervision. The Federal Survey of Maternal Mortality⁵ in fifteen states shows that 54 per cent of those who died had no prenatal care, about 24 per cent had poor care, 9 per cent indifferent care, 12 per cent good care, and less than 1 per cent adequate prenatal care. It would seem obvious from these figures that adequate antenatal care is a factor commonly lacking in the fatal cases.

For various reasons, especially costs, distances from available facilities and the lack of appreciation of the value of prenatal supervision by expectant mothers and an occasional physician, many pregnant women receive no prenatal care. It would seem the privilege of every expectant mother to have proper antenatal, intranatal, and postnatal care, but the problem of furnishing facilities for adequate care to all women regardless of financial ability and distance from clinics, hospitals and physicians has offered many difficulties. Pregnant patients may

be divided into four general groups: the clinic group, the rural group, the great middle class, and the "well to do". The "well to do" group offers no particular difficulty because they are in position to select their choice of attendants and facilities. The great middle class are usually cared for by the general practitioners, and efficient care for this group is simply a question of the obstetric ability, education, enthusiasm, interest and training of the practitioner. The clinic patient is cared for by the free or low cost clinics, and her problem is fairly well solved if she lives in a reasonable distance of a clinic. The rural indigent group has offered the most difficult problem. To educate this group to the need of prenatal supervision and to the appreciation of obstetrical hazards, and at the same time to have facilities available for their care, has been one of the major problems of those interested in maternal welfare.

It was with this group in mind that Federal funds have been made available under the social security legislation for maternal and child health in the rural areas. Virginia is cooperating through its State Department of Health in this program and prenatal clinics have been established for the indigent rural patients in various sections of the State under the medical direction of local physicians in cooperation with the officers of the State Board of Health. As a part of this same program, postgraduate or "refresher" courses in Obstetrics are offered to physicians in rural localities. This course is now in its second year and is available to physicians in the rural areas who desire it.

Practitioners who attend pregnant patients must remember that routine care during the antepartum period is essential. If a physician accepts maternity cases he should accept the entire responsibility. If the patients are unable to recompense him sufficiently for the many necessary services, and if he is unwilling to contribute his services, he should direct them to other sources where they may have the care that every pregnant woman needs. Physicians cooperating with the prenatal clinics must realize the importance of adequate examination and close supervision. The value of prenatal care will vary directly with the grade of supervision given.

*From the Department of Obstetrics and Gynecology, University of Virginia.

Read at the sixty-eighth annual session of the Medical Society of Virginia, Roanoke, Va., October 12-14, 1937.

The Children's Bureau⁶ has described standards of prenatal care which depend for their classification upon the period of pregnancy at which supervision begins, the examinations that are made and the regularity of the examinations. Arbitrarily the supervision was divided into three grades: Grade I—(a) adequate, (b) good; Grade II—indifferent; Grade III—poor. Physicians supervising pregnant patients should strive to render all of them Grade I—(a), or adequate prenatal care.

Adequate prenatal supervision should begin in the second month of the pregnancy. At the time of the first visit a complete history should be obtained, a complete physical examination done, and all facts recorded in a permanent history. The examination should include an examination of the teeth, mouth, thyroid, heart, lungs, blood pressure, breasts, abdomen, urine, blood studies including blood Wassermann, pelvic measurements (internal and external) and vaginal examination. Any abnormal findings must be interpreted in the light of their possible effects during pregnancy, labor and puerperium. The patient should be seen at monthly intervals during the first five months, and once every three weeks during the sixth and seventh months, once every two weeks during the eighth month and weekly during the last month. At the return visits any symptoms should be noted, the weight recorded, the blood pressure taken, the urine examined and the abdomen palpated. Additional examinations should be made and former examinations repeated as conditions require.

At the first visit the patient should be instructed regarding her diet and general routine of life. Ordinarily a varied diet consisting of proteins, fats, carbohydrates, vitamins and minerals should be advised. It should be sufficient to build up the tissues to full strength and to accomplish this without producing a marked storage of body fats. The minimum protein requirements must be maintained, and there is no reason why a normal pregnant woman should not eat meat in moderation notwithstanding an old superstition to the contrary. A much more sensible precaution is the limitation of salt, highly spiced foods, rich foods and indigestible foods. Some limitation of fats and carbohydrates to prevent excessive gains in weight is a wise precaution although there should be a sufficient amount of these substances in the diet to furnish necessary energy. The diet should be rich in fruits and vegetables and

desserts should be of fruit rather than pastry. A minimum of six to eight glasses of fluid should be taken daily. Milk is an invaluable food during pregnancy and at least three glasses of skimmed milk should be included in the daily diet. In addition calcium and cod liver oil in some form might be administered.

Advice regarding exercise and rest should be given and it is safe to advise a moderate amount of outdoor exercise which should not proceed to the point of fatigue. Activity should be interspersed with periods of rest, and it is advisable for the patient to be at rest for at least two hours some time during the day. It is essential that satisfactory bowel elimination during pregnancy be maintained either by diet, exercise or laxatives. The teeth should be examined twice during the pregnancy by a dentist and any necessary dental work performed. Tub baths and sexual intercourse should be interdicted during the last six weeks of the pregnancy.

The common complaints and abnormal findings during the prenatal period should receive proper consideration. Advice regarding the nausea and vomiting of early pregnancy is usually helpful. Frequent small high carbohydrate feedings and mild sedation often give reasonable comfort. Hospitalization should be instituted early in the severe or pernicious cases of vomiting. The blood examination may reveal some anemia of significance which should be treated by iron in adequate dosages. The presence of syphilis or a positive Wassermann reaction is an indication for immediate and active antiluetic therapy as adequate antisyphilitic therapy early in pregnancy usually preserves the health of the infant. Cardiac disease discovered during pregnancy requires unusually keen interpretation to determine the advisability of continuing the pregnancy. The opinion of a cardiologist as to the functional capacity of the heart in cases of heart disease or suspected heart disease is advisable. As a general working rule, however, if there has been a history of previous cardiac failure, pregnancy and labor are apt to produce sufficient strain to precipitate another attack of decompensation, often with a disastrous outcome. Tuberculosis complicating pregnancy offers a problem which requires a nice decision and while opinions are somewhat at variance at present regarding the correct attitude and the proper treatment of pregnancy with tuberculosis, each case should be individualized and the course pursued which seems

to be the wisest for that particular individual. However, practically everyone agrees that the tuberculous individual should avoid pregnancy until the tuberculous lesions have become inactive. Pelvic tumors complicating pregnancy should be detected during the antenatal period by abdominal, vaginal, or rectal examinations, so that the appropriate treatment may be carried out at the selected time. Congenital anomalies of the vagina, cervix, and uterus should also be detected during the pregnancy, their possible effects at the time of labor determined, and the correct method of delivery decided upon before the onset of labor.

Pelvic mensuration may reveal the presence of pelvic contractions. The advantage of the recognition of an abnormal pelvis before the onset of labor cannot be over-emphasized, as that is the time to decide on the proper mode of delivery. Hospitalization is indicated where there is any question of significant pelvic contraction. On the other hand, the practitioner should not place too much reliance on external pelvic measurements. The significant measurements are the diagonal conjugate for the anteroposterior diameter of the pelvic inlet, and the bischial and posterior sagittal diameters for the outlet. In cases of questionable pelvic measurements X-ray pelvimetry may afford additional and often more accurate information. It is to be remembered, however, that many factors other than mere pelvic size enter into the ease and safety with which vaginal delivery can occur. The size and presentation of the baby, the station of the presenting part, the shape of the pelvis, the general body configuration and muscle tone of the mother, and the condition of the soft tissues of the mother's pelvis are factors which may seriously impede labor in spite of an ample sized pelvis.

Important procedures during the prenatal period are blood pressure determinations, weight records and urine examinations, abnormalities in which may reveal an impending toxemia. A rapid sudden gain in weight is often indicative of an abnormal storage of fluid in the tissues. Patients with toxemias of pregnancy always require frequent and careful observation, and treatment by dietary limitation, rest and sedation should be instituted at the first evidence of trouble. Careful prenatal observations usually detect a toxemia and allow treatment to be instituted, and if necessary the pregnancy terminated before convulsions appear or irreparable damage to the renal or vascular systems occurs.

That this type of prenatal care with reasonable and intelligent interpretation of the findings and the prompt institution of the generally accepted treatment for the various abnormalities would reduce the maternal and fetal mortality is evidenced by the federal, state and municipal⁷ surveys. Obviously, of course, antepartum care is only a part of complete maternal care, although it is frequently the most neglected part. Intrapartum care and the actual confinement are the most critical and important parts as far as the possibilities of serious results for the mother and the baby are concerned. In order, however, to render intelligent care at the time of labor, it is essential that something of the previous and present physical condition be understood. To be forewarned is to be forearmed. Elective procedures may be instituted and many emergencies of labor avoided by proper antenatal examinations. To expect prenatal care to completely abolish maternal and fetal deaths is, of course, ridiculous, but careful examination and supervision during pregnancy and reasonable interpretation and treatment of abnormal conditions in an early stage will surely reduce the number of calamities.

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DISCUSSION

DR. A. M. GROSECLOSE, Roanoke: In discussing a paper so complete as Dr. Williams' one can only emphasize some of the things he has brought out. Preventive medicine plays no greater part in any other branch of medicine than in obstetrics. Within the past few years, although the mortality in the Birth Registration Area is still staggering, there is no question that great advances have been made. These advances have chiefly been made in thickly populated sections. There has been some improvement in the rural areas, but I think our chief problem in the

rural areas and the less thickly populated sections is education of the public. The doctors, as a rule, are willing to give patients prenatal care if they will ask for it. Most of the patients in the rural areas think that if they carry a specimen of urine to the doctor it is all that is necessary. If they examine a specimen at intervals and cannot see the patient they might prevent an occasional case of toxemia, but certainly just a specimen of urine is very inadequate.

Several years ago we had quite a number of cases with eclampsia, with convulsions, that were sent into the hospital. During the last few years that number has dropped off considerably. I think that means only one thing—that there is better prenatal supervision. Personally, I

have seen no cases of convulsions in patients who had adequate prenatal care. I have seen plenty of toxemia but no convulsions. I have seen patients with badly decompensated hearts and other conditions, mostly in patients who had no prenatal care, most of which could have been prevented if those patients had had care early in their pregnancy. In the most thickly populated area it is surprising how many women come in demanding prenatal care. In a few years, depending upon the amount of education we can put over to these people, the more they are going to demand prenatal care; and it is going to be up to the doctor to take care of them.

HOSPITALIZATION BY THE GROUP PAYMENT PLAN ON A STATE-WIDE BASIS.*

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Of all the scientific discoveries and inventions marking the past half century, none are more significant to human welfare than those in the realm of medicine. Research is adding constantly to our fund of accurate knowledge, and sociology allied with preventive medicine is making great strides in adapting this new knowledge to human needs. Yet, we must still admit that there is very great need for continuing progress in working out plans to bring this new knowledge and the advantages of hospitals and medical service within the economic reach of a larger number of our population. "The public health" in the broadest sense has come to be a popular topic and newspapers and magazines are doing much to develop an intelligent popular interest. Hospitals are now being generally recognized as an essential feature of the set up necessary for the maintenance and promotion of good health—a tremendously important part of our modern social machinery.

With some two million people in the United States sick all the time with illness, much of which is preventable; with accidents, many of which are preventable, costing the United States annually more lives than did the World War; with cancer on the increase and also costing the United States more lives than did the World War; with appendicitis still ranking among the fifteen leading causes of death in spite of all our skilled surgical technique; with

America still standing at the bottom of the list of twenty-six leading nations in its maternal death rate; with only 20 per cent of the American people receiving adequate dental care, it is manifest that we face a definite need for certain social readjustments.

Taking as an illustration the one item of maternal deaths, we find that Sweden lost only twenty-five mothers per ten thousand living births in 1935, while the United States lost fifty-eight women per ten thousand live births. By way of contrast, then, with the figures of some other countries, it is very evident that many of our people are failing to receive the full benefits which modern science makes available but which unfortunately are often out of their economic reach.

The average citizen now knows about laboratory tests and basal metabolism and X-ray examinations and the advantages to be gained from modern surgery, and he knows that these things are costly. With his large family and small income, the cost of these benefits often appear to him to be exorbitant. When accident or serious illness make hospitalization necessary he may find it very difficult if not impossible to pay the bills. It is a well-known fact that many people postpone seeking needed hospital and surgical service on account of the cost. While it must, of course, be recognized that other groups, philanthropic and governmental, are often responsible for providing hospital facilities, yet the majority of people look upon the problem as medical and depend upon doc-

*Read before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, Va., October 12-14, 1937.

tors to do the planning as well as to supply the scientific knowledge and technical skill needed for treatment or prevention of disease. A study of these facts, then, indicates that while the progress made in the science and technique of medicine has been spectacular, we have been slow in making those social and economic adjustments needed to bring the full benefits within the economic range of the low income groups of our people.

According to the report of the Committee on the Cost of Medical Care, there are in the United States about 150,000 physicians, 70,000 dentists, 200,000 nurses, 7,500 hospitals, 6,000 clinics and 60,000 drug stores; all concerned in furnishing care and medicines, with some \$5,000,000,000 invested in hospitals, clinics, laboratories and in the private offices and equipment of physicians and dentists.

The cost of medical care is of interest to every housewife who is trying to plan the family budget, to every man trying to pay his way while he is well and meet his bills when he is sick. Authorities tell us that for adequate hospital care for the people there should be at least one bed to every 150 of the population. Here we find that there is great inequality of distribution, so that, while certain medical centers may have reached this ideal, yet in the rural sections and in many states the number is far short of this ideal. With one physician to every 866 persons of our 130,000,000 and one hospital to every 17,000 people, it would appear on the surface that Americans are amply supplied with both physicians and hospital service. Yet, when we consider the fact that in Mississippi, for instance, there is only one hospital bed to every 1,054 of the population, and when we consider the meaning of the fact that in many large rural areas there is no physician, the pertinent question does rise: do our people as a whole have adequate medical care? Manifestly, the difficulty is largely economic and due to lack of planning and organization.

Due to an ever increasing awareness on the part of the average citizen and to the increasing concern for his welfare manifested by our leaders in government, medicine is being socialized whether we like it or not, a fact which should be looked upon not so much as a cause for alarm as a challenge to the best leadership of the profession. That one-third of the American people are ill-fed, ill-clothed and ill-housed, to quote the President's phrase, is calling also for a further degree of protection from prevent-

able disease and for a fuller share in the benefits to be gained from more complete use of scientific knowledge.

The extension of the insurance principle into many phases of our modern life has given rise to a very significant movement known as "Hospitalization by the Group Payment Plan". This appears to be the most practical and timely movement growing out of the study made by the Committee on the Cost of Medical Care, and when based on wise judgment and sound principles is proving a success in many American cities. Initiated at Baylor University Hospital in 1929, primarily for the benefit of 1,500 teachers, the movement has rapidly spread until now it is in operation in over sixty American cities. As developed in this country there are certain definite principles which appear to be sound and in keeping with the best sociological thinking.

While no one person can predict how much hospital care he will need during a given year, experience indicates that it can be determined by mathematical processes with a striking degree of accuracy, how much will be required by a large group. For example, 5,000 people from the experience of other groups over a period of years, might determine that \$30,000 worth of hospitalization would be needed annually. Then, each of the 5,000 by paying fifty cents per month into the common fund would be insured hospital care without further cost in case of need. This method of removing the economic hazard from hospitalized sickness is not just an idea but an accomplished fact for over a million and a half employed persons in the United States. Over 5,000 hospitals are participating in this rapidly growing movement.

The American Hospitalization Association after a careful study has endorsed the principle of group hospitalization. Similar action has been taken by the American College of Surgeons. The American Medical Association, while it has not officially endorsed or approved group hospitalization, has established a group of principles to guide those who are interested. All of these organizations warn against certain errors likely to be made in developing plans of this nature. While considerable variation in detail may be noted in the different plans in use, the principles involved are the same. These principles as set forth by the American Hospital Association in 1933 consist of:

- (1) Emphasis on public welfare;

- (2) Non-profit sponsorship and control;
- (3) Enlistment of professional and public interest;
- (4) Free choice of physician and hospitals;
- (5) Economic and actuarial soundness;
- (6) Limitation to hospital service;
- (7) Dignified promotion and administration.

A fairly typical procedure for the formation of a group hospitalization plan may be outlined as follows:

The first step is discussion by the legitimately interested group concerned with the public welfare. Information should be obtained from all possible sources and legal guidance secured in order to make any contemplated plan meet the requirements of the law. Full data on the subject has been compiled by the American Hospital Association of which C. Rufus Rorem is Director. According to such a typical plan set forth by the American Hospital Association, special emphasis is laid upon free choice of both hospital and physician and upon a non-profit or non-commercial set up. Such a hospital service or hospital association enters into contract with subscribers who make equal and regular payments to a common fund which is used to pay for necessary hospital expenses for subscribers and their dependents. The corporation also enters into contract with participating hospitals which provide certain services to subscribers and rely on the association or corporation for payment of bills.

Experience shows that about one member of such a hospital association out of twelve will actually require hospital service during the year.

On July 1, 1937, there were thirty-three plans operating in this country, covering 619,223 subscribers and 967,427 dependents, a total coverage of over one and a half million persons. No two of these plans are exactly alike.

The Richmond Hospital Association, with Mr. M. Haskins Coleman as General Manager, was established in January, 1936. It is non-profit, has eight participating hospitals, of which six are privately owned. Subscription cost or enrollment is \$1.00, monthly rates are 85c for employed subscribers; for a subscriber and one dependent \$1.50; with two dependents \$1.75; subscriber, wife and dependent children \$2.00 monthly. Hospital benefits are twenty-one days' care in semi-private room including bed and board; general nursing care, complete laboratory service, operating room, delivery

room, anesthesia, routine medicines, dressings, maternity care including baby (after ten months' membership of mother). Dependents receive same care as employed subscriber. Emergency care anywhere paid a maximum of \$6.50 per day not to exceed twenty-one days. An allowance of \$4.50 made toward the purchase of private accommodations.

This Richmond plan, as carefully worked out, is apparently succeeding splendidly and might well serve as a model for other cities or for the State as a whole.

North Carolina has, already operating, two associations on a state-wide basis. Alabama has a state-wide plan. Maryland, New Jersey and Minnesota are working toward the development of state-wide plans.

In my opinion Virginia might well build on the experience of these states, and of Richmond and Norfolk, its largest cities, in order that the benefits of group hospitalization may be extended to all Virginia people and to all Virginia hospitals caring to participate. Surely we have philanthropically minded citizens who might underwrite a sound plan if it were properly explained and endorsed by the State Medical Society and other organizations concerned in seeing more adequate hospital service brought within the reach of a larger proportion of our population.

I would suggest, therefore, that a motion for such endorsement in principle be entertained during this session of the Society and that a special committee be set up to further study this important subject with a view of determining next steps.

DISCUSSION

DR. FREDERICK P. FLETCHER, Richmond: I think it behooves physicians to be very cautious about the *means* we endorse toward the *ends* we all are working for. The prevention of disease, and its cure when it occurs, the alleviation of pain, the promotion of public health in general—on these desirable objects we all agree. But is state-wide socialized medicine a desirable and effective means to this end? Personally, I doubt it and I believe every man in this audience will agree with me on that.

Dr. Garnett is correct in stating that many people postpone hospitalization. It has been authoritatively estimated that 50 per cent of the people from the low and medium income groups delay entering the hospital in order to save up money. We know that delay in taking care of illnesses invariably makes you a sicker patient, a longer illness slows recuperation, and results in greater cost, increased economic loss and a higher death rate. It should further be borne in mind that the cost of hospitalized illness forces between 35 per cent and 40 per cent of admitted patients

to call upon their physician to compromise with his good judgment, and the patients best interest, by allowing them to leave the hospital sooner than they should in order to save them a few dollars.

Dr. Garnett is also correct in stating that the medical profession should take the lead in making those social and economic adjustments necessary to place the best of medical and hospital care within the reach of the low income groups. If they do not take the lead it will soon be forced upon us in a way outside of our control. This was evidenced in the last Congress by the number of bills introduced whose purpose was to solve the cost of medical care for the masses. Don't think, gentlemen, that this administration is responsible for these bills. As a matter of fact, most of them were introduced by anti-administration members of the House and Senate.

We have permitted the American Hospital Association to advance the only constructive program for the control and prevention of Socialized Medicine. I refer to the "Group Payment Plan for Hospitalized Illnesses." The response of the people wherever a plan is inaugurated is evidence of the desire of the medium and low income groups to pay for their own sickness expense. It has been noted in many cities where these plans are operating that medical expense is paid more readily because there was no hospital bill to pay. The soundness of these group non-profit community plans is sufficient evidence that the principle is sound.

Hospital Service Plans are today operating in Danville, Norfolk, Richmond, Portsmouth, Roanoke and Southwest Virginia. Scott County has a plan with Kingsport, Tenn. Galax, Grundy, Lynchburg, Alexandria, and the Peninsula cities are contemplating Group Hospitalization at the present time.

Dr. Garnett suggests a state-wide group hospital plan such as operates in North Carolina and Alabama. It is doubtful if such a plan could function in Virginia, without an enactment of the Legislature, amending the State Insurance law, to specifically permit the operation of a non-profit, state-wide, hospital service plan.

At present, the hospital service plans operate under the supervision of the Securities Division of the Corporation Commission, and each plan is specifically designated as agent for the hospitals participating in the community. The contract for hospital care is made between the hospital and the subscriber, with the Service Association acting as sole agent for the offering of the contracts.

A state-wide plan should be carefully considered. Should a committee be appointed to study such a plan, their first problem would be to wait on the Corporation Commission for their ruling, as to whether or not it would be possible under the Securities Division. Should the Commission rule that a state-wide plan would have to operate under the Insurance Commission, then it would be necessary to arrange for the deposit of \$10,000.00.

DR. WALTER B. MARTIN, Norfolk: I have been interested for a number of years in some of the problems connected with the social aspects of medicine, and for the past two years have been on the Board of Directors of the Tidewater Hospital Service Association. I strongly approve

of group hospital insurance as it has been developed in certain localities, but I doubt the wisdom of applying this plan on a state-wide basis.

Only a few years have elapsed since any of these plans have been in operation. We have not yet acquired sufficient information to foresee all of the possible dangers and pitfalls that may be encountered. As the various local organizations develop and extend their influence, we will acquire a better insight into the problems connected with group hospital insurance. We have a tendency in this country to feel that if a thing is theoretically good, we should have it tomorrow. We must hasten to the millenium, and every one else must hasten with us. In this instance, I believe it is wise to make haste slowly. We have yet to find out from experience what our rate of hospitalization will be over a period of years. We have acquired some information on this point as applied to wage earners, but, as we are just starting a family plan, we still know little about the rate among dependents. Local conditions vary, and somewhat different plans may be suitable for different areas. It may be quite difficult to work out a system that may be applied uniformly to a number of localities.

Local control of these organizations seems to be most important. If they are to serve their purpose, over-head must be kept low and chiselers should be kept out. For this reason, contracts should be simple and as free as possible from exceptions.

The organizations should be administered by a local board capable of broad-minded interpretation of the contract. In a state-wide plan, the organization would from necessity be under the direction of a central director or board, and the varying needs of different localities would be poorly understood. Rather than embark on a state-wide plan, it would seem advisable to encourage the development of local groups with the purpose of the union of these various groups into a state-wide organization.

DR. G. F. SIMPSON, Purcellville: The doctor is charged on all occasions with furnishing adequate medical care to our citizens. If the patient is a woman who is going to be confined, living in a modest home, who calls one of the general men practicing medicine out in the mountains of Virginia, after she knows or thinks she is pregnant, and he looks after her carefully, examines her urine once a month, watches over her, bringing her up to term, when he goes into that home and delivers her of a normal baby, without mortality or morbidity, is that patient getting adequate medical care? Is it essential to institute that patient in a hospital? All of your plan looks to the building up of the hospitals and the institutions and favoring a group of favored citizens, and I think I can conscientiously say this, as I happen to be on the board of directors of the Loudoun County Hospital and vice-president of the organization. I am speaking from facts.

I am going to read you what your economics will mean to the State of Virginia, in the interests of the citizens of Virginia, and not in the interests of any plan.

RICHMOND, VA., MARCH 25.

Approximately half of the white population of Virginia occupies the economic status of peasants, and of

these thousands may be classed as submarginal, according to Dr. W. E. Garnett of Virginia Polytechnic Institute.

Writing in the current issue of the *Virginia Journal of Education*, Dr. Garnett declares that the whole cultural level of the State is depressed by this marginal population, now estimated at 550,000 white persons and 325,000 colored—875,000 in all.

He classed as marginal those persons whose gross annual income is less than \$600 in normal times, who have less than a fifth-grade education, who have poor housing and other living conditions, and who pay little or no taxes.

Of the 550,000 white persons falling in this group, he says 150,000 are poor mountain people, 118,000 white tenants, 164,000 white hired laborers, and 118,000 white marginal farm owners and marginal non-farm rural people not included in the other groups. There are probably 250,000 children among these families, the writer says.

Dr. Garnett asserts that these people account for Virginia's ranking of thirty-sixth among the States in per capita wealth, thirty-ninth in per capita income, forty-fourth in "significant educational conditions," and thirty-second in gross income per \$1,000 of farm-property investment.

Now, members of the Medical Society of Virginia, add

the 875,000 marginal citizens and the 250,000 children, and you have 1,125,000 people who cannot avail themselves of any form of insurance. We have in the State of Virginia today two million and some odd thousand citizens, and your plan is doing something for the people who are already in position to take care of themselves, and that shows the superficial consideration that is given these suggestions for the health and welfare of the people. There is a quotation you all know,

"Ill fares the land to hastening ills a prey,
Where wealth accumulates and men decay."

We have a wealth of scientific information, but have not the men decayed who should use that for the purposes that we are trying to accomplish?

DR. GARNETT, closing the discussion: I wish to thank these gentlemen for their very generous discussion and their criticisms, both adverse and favorable I think the thought Dr. Martin expressed, that five years or even longer would be required, is a very modest statement. In North Carolina, where two state-wide plans are apparently successfully working, they have been planning and working for group hospitalization much longer than five years. I think such plans have to be thought over and discussed a great deal before a final decision can be reached, but to have the Society begin to think of them, at least, this year will do no harm.

MENTAL HYGIENE CLINICS IN THE COUNTIES—AN ANALYSIS OF 120 CASES EXAMINED IN 13 COUNTIES DURING 1936-37.*

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Within the past decade we have witnessed a marked increase in mental disease and criminality which has not yet reached the peak of expectancy. Estimates from authoritative sources are in accord in this regard, and hospitals for the care of the mentally ill are being enlarged. At present it is estimated that two hundred million dollars of public funds are being spent annually for the care of mentally diseased patients and in the future the amount needed will be more than twice this figure.

The State Hospitals have been crowded for years and it is necessary to constantly make additions in order to provide for ever increasing numbers of admissions each year. During 1935 there were about 12,000 patients in the five State Hospitals, which

*Read before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, Va., October 12-14, 1937.

is an increase over previous years and substantiate the fact that there is an increase of mental disorders. There is also an actual increase in the functional mental disorders such as the psychoneuroses. These require treatment, and although they do not reach the Hospitals of the State, yet they are costly since the earning power of this group of individuals ceases for a period of time. If we could estimate the cost of these functional disorders in addition to that of the psychoses, it would make our national debt seem small.

In addition to the above, we must consider another problem which is just as important, namely, juvenile delinquency. The so-called "depression children" are beginning to attract attention by their anti-social conduct which is a result of the poor environment in which they were reared. These children

did not receive the necessary training in the home as the parents had to neglect them in their effort to obtain the bare necessities of life.

In many instances the homes were broken and the children cast upon the community. Thus, they had to rely upon instinct for preservation and fear took the place of understanding. As a result of this situation the juvenile courts were filled with cases involving children who were arrested for stealing, house-breaking, murder, truancy and sex crimes. Last year it was estimated that juvenile delinquency cost the public four or five billion dollars, yet only a few constructive methods were advanced to prevent this great loss. Punishment, which is costly, has produced little result and in many instances only incites some children to commit worse crimes later in an attempt to get revenge.

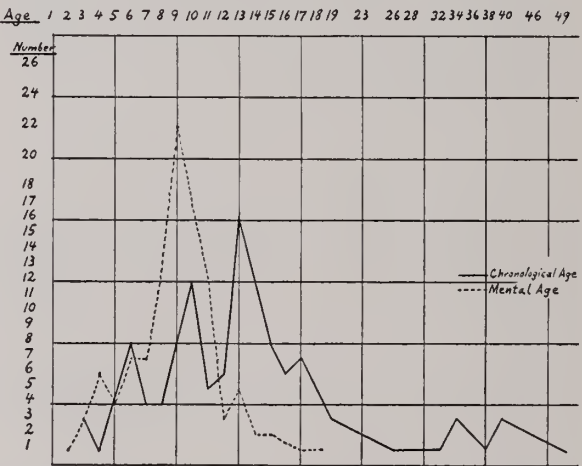
These boys and girls who are placed in jails and detention homes because of delinquency already feel rejected by everyone and then the feeling of persecution is added. To help such an individual at this time is difficult and requires a long period of care. With the present facilities it is impossible to do much constructive work as the group is too large and the bad habits or conflicts are deeply imbedded. The majority of lay people still do not understand that the conduct of these children is an outward expression of the conflicts which are taking place within and is not purposeless. To continue to try to repress these conflicts by means of threats of punishment results in disappointment and failure, whereas instead they should be offered healthful substitutes. By this means correction of bad habits may be achieved and these children will not encounter the courts or jails.

In an effort to educate the public and to demonstrate what can be accomplished by correcting difficulties in the incipency, Mental Hygiene Clinics were held in thirteen counties during the year 1936-37.

| | |
|--------------------|---------|
| Arlington County | 8 cases |
| Buckingham County | 6 " |
| Brunswick County | 5 " |
| Charlotte County | 7 " |
| Culpeper County | 6 " |
| Dinwiddie County | 45 " |
| Fauquier County | 5 " |
| Gloucester County | 13 " |
| Halifax County | 4 " |
| Norfolk County | 8 " |
| Rockingham County | 5 " |
| Southampton County | 3 " |
| Warwick County | 5 " |

In such instances the local Superintendents of Public Welfare requested that the clinic visit the county and examine a certain number of cases. A complete social history of each patient, including a statement of the problem involved, was obtained prior to the day of examination and a physical examination made by the local physician. Few of these patients could pay for medical care and the majority had been known to the local welfare agency for a long time.

On the prearranged day of examination, the staff of the State Mental Hygiene Clinic visited the county, spending the entire day, or if necessary two days, examining the most urgent cases. Each patient is given a psychological test and a psychiatric examination at this time. As a rule only four or five patients can be examined in a day as often very complicated situations are encountered which may



require several hours' consultation before any satisfactory recommendations can be made. At the completion of the study of the cases a conference is held with the local worker and physicians interested, during which time there is a free discussion of each individual examined. Later a complete confidential report is sent to the Superintendent of Public Welfare, including the recommendations for helping the individual. Frequently it is necessary to visit the same county again and interview the same individuals before a satisfactory solution can be found, or in some instances it is arranged for the individual to come to Richmond for a more complete study.

Age Groups: In this group of 120 patients examined in the thirteen counties, the ages ranged from two years to forty-nine years. The chart shows the

distribution of patients according to age and it is noted that the majority are in the adolescent period ranging from ten years to sixteen years. This is to be expected as during this period of life many difficulties are encountered and if not adequately managed may cause more serious trouble later.

At this period the individual begins to show the early signs of anti-social conduct and more can be accomplished by instituting proper treatment than at any other time. This is preventive medicine and accomplishes more than treatment after the patient has a long record of misdeeds.

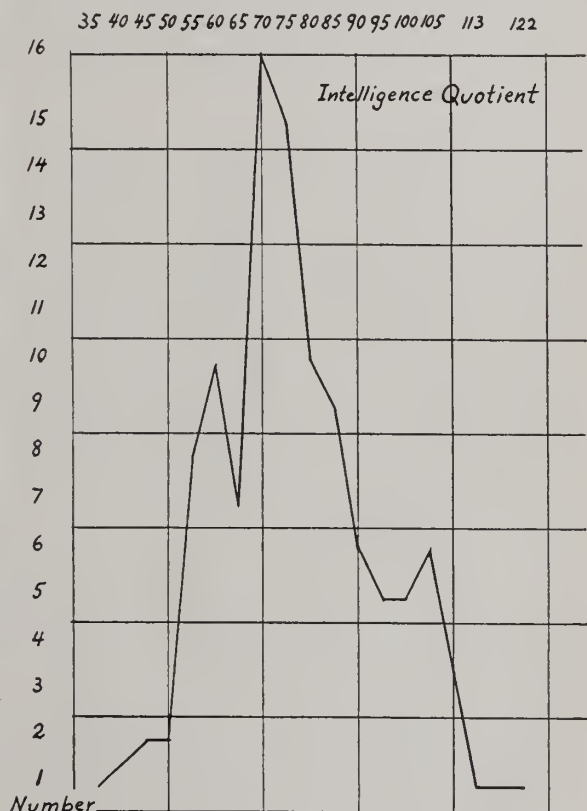
Home Situation: Much has been said about the influence of environment on the behavior of the individual but often this is not realized until the home is actually visited. Much more can be gained by a visit to the local community and the home of a patient that can be expressed in a history of any kind. This is one of the great advantages of these clinics and helps greatly in understanding the reactions of the individual. Whereas the examinations were not conducted in the homes, yet they were often visited by the clinic staff and other members of the family talked with about the patient.

The majority of the homes were classified as "broken" and this placed additional burden upon the remaining parent. In many instances the home was not actually "broken" but one or both parents alcoholic which caused many conflicts within the home. This condition not only produced emotional instability and insecurity but also a lowering of morals. Not infrequent were the recitals of fights within the home, the length of jail terms served by the parents and immoral practices of the parents or children. Most of these homes were of the marginal or submarginal type and partially or entirely dependent upon Relief. Frequently there was not adequate food so that the diet consisted chiefly of corn bread, coffee and molasses. Even in the rural sections milk was scarce and fresh vegetables were obtained only during several of the summer months. Clothing was also inadequate and it was not unusual for the children to remain away from school because they lacked the necessary warm clothing. Furniture was scarce and the little that was had was dilapidated. In one home, the mother and four children slept on one small bed.

In many instances relief was adequately administered to the home but the parents were not capable of managing it and consequently there was

actual want all the time. As an example, in some cases a certain amount of money was given to the parent to supply food for a week and this money was spent in one day for candy, cake, etc., so that it was necessary for the children to beg on the streets. The general atmosphere of the homes is depressing and the occupants subdued, listless and wastrel. Therefore, they lacked the essential qualities of a home such as security, love, sympathetic understanding and parental guidance.

Intellectual Status: The Stanford Revision of the Binet-Simon Intelligence Test was used to deter-



mine the intellectual development of each individual in this group and the test was administered by a competent psychologist. The largest group of patients were in the borderline group. Only about ten patients were of normal intelligence in the entire group of 120 and many were definitely defective. The charts show the actual distribution according to mental age and also the intelligence quotient of these patients. This degree of mental retardation was not surprising in this group when the heredity and environment is considered, and it tends to substantiate previous studies. The limited mental capacity

partly explains the failure of adjustment of the individual and the inability of the children to do satisfactory school work. The parents of such children were retarded and unable to do anything but menial work.

Many of these children were forced to continue in school when they could not do the classwork and caused much trouble. They were teased by other children for being in the lower grades when they were much larger than any of the other pupils. Frequently they were promoted to the next grade only because the teacher wanted to get them out of her room, forcing the problem upon another. In these instances the need is for vocational training, and if this could be substituted for classwork there would be less difficulty.

To illustrate this point, a boy was an habitual truant from school and all efforts to make him attend school had failed. When at home he was industrious and a help to his father who had a farm. This boy had reached his limit in school and explained his problem by saying he "could not learn", but this truth was ignored by the school authorities because he was not sixteen years of age, at which time he would be allowed to stop school. Such examples are all too common and produce rebellious and anti-social individuals. These individuals could be given vocational training which would make them useful and often independent.

Physical Status: Physical examinations of this group of patients revealed that most of them were malnourished and focal infections were frequent, such as bad teeth and infected tonsils. Only one patient had a positive Wassermann. Several cases had mild rheumatic infections and three had had moderately severe head injuries some years previously. Undoubtedly these physical defects had a bearing on the individual's reactions and in each instance recommendations were made that it be corrected as soon as possible.

Psychiatric Status: It is difficult to describe all the various types of personalities encountered in such a group of individuals and only a few will be mentioned. The children showed marked evidence of insecurity and emotional instability. There was a feeling of inferiority and apprehension which could not be escaped. Certainly these children had every reason to feel this way as they were literally trapped by circumstances in an unwholesome environment and had to repress every emotion. Fear of parents,

of school, and even existence dominated them so they acted involuntary. There was no one to encourage them or to supply the guidance which is so necessary during this period.

There were two children who showed a schizoid type of personality and will be continued under observation. One adult was definitely psychotic and institutional care was necessary. A recent report from the hospital indicates that he is making an adjustment. A post-encephalitic syndrome was encountered in several instances and believed to be the cause of the abnormal conduct. Endocrine dysfunctions, including such conditions as dwarfism, were noted which markedly influenced the individual's reaction to his environment. In the group as a whole there was a marked lack of adequate sexual understanding and especially in the children did this appear to be a factor which produced many conflicts. Most of these people had only crude and misleading ideas of sex which were gathered from the street corners. Proper instruction in these matters would help abolish many fears and also prevent difficulty later in life.

Reasons for Referral: There were three main reason for requesting study of this group: 1. Proper school placement of certain children; 2. Emotional difficulties, such as temper outbursts, incorrigibility, fears and family conflicts; 3. Advice concerning proper placement and training.

These individuals were not delinquent and, therefore, had no contact with the courts at the time of examination but study was made in an effort to help them adjust in society. Most of this group were potentially anti-social and, if allowed to continue, intervention of the law would be necessary. These facts were recognized by the local workers in most instances but the advice of the clinic was desired to ascertain the best method of treatment. In other cases the parents had asked for aid because they could not understand or cope with behavior problems of certain members of the family.

Advice of Clinic and Results: In each case specific and practical recommendations were made to the local worker. As an example, it was advised that the mentally defective individual be committed to the Colony for care and the child who had reached his limit in school should receive vocational training. When possible it was urged that the home remain intact and improved but if this was not practical it was advised that the members of the family

be placed where they would receive the necessary care. The maladjusted and emotionally unstable individual should be given better supervision and kept in contact with the clinic through the local worker. If more intensive treatment was needed arrangements were made to have the individual visit the clinic frequently.

Reports from the local superintendents of public welfare have been encouraging and they have been enthusiastic about the results obtained. They have acted upon the advice of the clinic and now have a better understanding of the individuals.

SUMMARY

An analysis is presented of 120 cases examined in thirteen counties of the State during the year 1936-37 by the State Mental Hygiene Clinic. This analysis illustrates the value of these clinics and that this is one of the constructive measures that should be used to prevent not only mental disorders but delinquency. This work was undertaken with the concept that the problems of children and adults should be treated as early as possible, rather than to ignore them until institutional care is necessary. The importance of heredity, environment and training in producing mental disorders is emphasized and that good results may be obtained by manipulation of these factors. No unusual methods were used in examining and treating these patients and they are representative of the rural population of this social strata.

Some years ago the State attempted such clinics but they were abandoned because of lack of funds. At this time there is a need for such clinics and the necessary funds should be appropriated. Educational programs in recent years have enlightened the public so that we can shift the scope of the work from the court to the community. The purpose of this analysis is to broaden the understanding and increase the cooperation of the physicians of the State in the program of the Mental Hygiene Clinic, for without this support little can be accomplished.

DISCUSSION

DR. D. C. WILSON, Charlottesville: The value of a traveling clinic depends more than anything else on what the local community can do after the clinical study has been made, for no matter how thorough their study may be and how correct their recommendations yet they have not really accomplished anything until these recommendations are carried out. I do not know what local arrangements Dr. Williams has but from our experiences in

Charlottesville and in Danville we have found it very difficult to have recommendations carried out so efficiently that problems may be solved. You have noted in his paper that perhaps they have a great variety of different difficulties described, that is poor homes, upset families, need of boarding homes, need of vocational guidance. These difficulties are in practically every community but the needs are there also and unless the needs are met there are very few ways that the difficulties can be remedied. It is believed that criminal tendencies and mental diseases both psychoneurotic and psychotic all belong to one great group of behavior problems, that is one great class of disease of the personality; therefore, delinquency as well as mental disease and other behavior disorders all fall within the realm of the psychiatrist. Also it is believed that just as in heart disease a great many of these cases can be prevented if they can be recognized early and controlled. Therefore, such clinics as Dr. Williams has been carrying out are of great value in recognizing these disorders and adequate follow-up of the social worker is supplied, so that if his orders can be carried out, these studies will be of immense value. There is no one in the community who could do more than the physician; if the local physician is interested—the work will flourish. We have been conducting a clinic in Danville once every month for the last four years. There we are absolutely dependent upon the physicians of the town. Unless we have the cooperation of Dr. Garnett as well as the other physicians of Danville we could not get anywhere. From Dr. Williams' report it is probable that his studies will follow the same line that all other psychiatric clinics follow, that is, at first he will get the feeble-minded and the borderline intelligence cases about which he can do very little. Indeed, there is nothing to do until the communities realize that they must have special classes in their schools, and the State realizes that we must have more than the Colony at Lynchburg to look after these individuals. At the present time all that is done is to send them to the penitentiary where they get instructed in crime. It is too late to wait until these children with borderline intelligence get into the adolescent stage. They should be recognized sooner and socialized in the school. It is for these people that we need a trade school. Indeed, the Medical Society of Virginia could do more for the problem of delinquency by recommending a trade school or that trade schools be established throughout the State than by any other way. I certainly enjoyed Dr. Williams' paper. I think it was a splendid piece of work that he illustrated and I certainly hope that he will get the cooperation of all the physicians in the neighborhood, for certainly without them he can do nothing.

DR. FRANK D. WILSON, Norfolk: Dr. Williams' paper served to emphasize the report of the Child Welfare Committee yesterday, in which that committee recommended that the Society take some action toward forwarding child welfare generally in the State. Dr. Williams has called your attention to the fact that the economic status of these children is of the lowest, or at least in the lower strata, and that the family difficulties probably come as the result of poverty and misunderstanding resulting from poverty.

The fact that only fifty counties have been visited by the clinics emphasizes the need of additional appropriations for the purpose of carrying this work into all the counties of the State. So it is all along the line of child welfare. In almost every part of the work, with the exception possibly of the orthopedic, there are insufficient funds to carry on the work. It seems to me the Medical Society has the opportunity to be of great service to the children of the State in bringing to bear its support in this work. Dr. Hall, Superintendent of Public Instruction, has recently made a survey of the schools, making a study of high-grade mental defectives, morons, who are repeaters and costing the State a great deal of money; and he is asking the State for appropriations for special classes. If these clinics can be continued through all the one hundred counties, and if the Department of Education can get sufficient funds to set up the classes which Dr. Hall wishes to inaugurate, there is

no reason why this situation should not be very greatly improved.

DR. WILLIAMS, closing the discussion: I want to thank Dr. Dave Wilson and Dr. Frank Wilson for their discussion of this paper, and to explain that what we are trying to do is to enlist the support of the local physicians, primarily, and also to use the local welfare worker in the County. That has been just a recent development in the Counties of the State. These workers frequently visit Richmond, perhaps once a week or twice a week; and when they visit Richmond we can talk with them about individuals whom we have examined. In that way we hope to keep contact with them through the social worker, and can have them brought to Richmond if necessary. Of course, we have not reached the western part of the State; it is only the eastern part of the State that we have been able to contact, because of the limited time.

JOHN PETER METTAUER'S NOTES ON CLINICAL LECTURES BY BENJAMIN RUSH.

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Among the interesting manuscripts in the Hampden-Sydney college library there are some choice bits of Mettauerana.¹ The list includes letters, diplomas, certificates of membership in learned societies and account books kept by both John Peter Mettauer and his father, Francis Joseph Mettauer. There is also the birth certificate of Francis Joseph. The accounts cover the period from 1789 to 1850, although there are some gaps. They are well kept and very informative at times. They should be valuable to historians, for Francis Joseph treated such well-known people as Judith Randolph, Peter Francisco, Patrick Henry and John Randolph. Henry's record indicates that he suffered from frequent stomach disorders and, better than that, proves that he paid his doctor if not all his other creditors.

In addition to the above there is a small unbound booklet entitled "Notes from a Course of Lectures on the Institutes and Practice of Medicine Delivered in the University of Pennsylvania by Benjamin Rush,

1. These were deposited at Hampden-Sydney by Mrs. Genevieve Holladay whose husband, the late Dr. W. M. Holladay, bought them at the sale of Dr. John Peter Mettauer's property after his death. Mrs. Holladay still has a number of Dr. Mettauer's surgical instruments. Another friend presented the College with a metal, jug-like ball, which formerly adorned the cupola of the Randolph-Macon Medical School conducted by Dr. Mettauer. This cupola is now in Richmond.

M.D., etc." The lectures are copied in longhand. Close comparison with several samples of Dr. Mettauer's hand convince me that the writing is his. The first four pages of the lecture reproduced below have been lost, which explains the beginning in the midst of a sentence.

"method of learning the cure of diseases. The description of diseases in Europe are by no means applicable to such as occur in the United States. Till within these few years the English and American poets imitated the writings of Virgil, and all our poems exhibited Roman manners and customs. The British and American painters imitated Raphael, and our pictures exhibited Italian landscapes.

Mr. West first attempted to deviate from this absurd custom. His paintings are very justly admired by amateurs. In the same manner till the time of the illustrious Sydenham and Morton, our books of medicine exhibited an account of Greek and Roman practice, and were in reality mere copies from the Greek and Roman authors. Within these 30 or 40 years physicians have laid aside their folios and attempted the true Hippocratic art of studying medicine. I do not mean by studying the works of this great man, but by observing carefully diseases as they occur and make observations for themselves.

Hence we explain the fact that within 30 or 40 years past more important improvements have been made than in the 100 years preceding.

Nature, I repeat it, must be our guide. Let her be observed with attention. This is the more necessary in North America, as accounts of our diseases (which differ very decidedly from those of the West Indies and Europe) are more useful as they are rare. An American physician will in vain attempt to cure diseases which occur only in our country by European practice or that of the West and East Indies. Many Americans have lost their lives under the care of the most eminent British physicians from the mild practice which they use being incapable of subduing a disease of such force as that they encountered. Again the diseases of our country afford us a strong argument in proof of this position. Our epidemics, for instance, when have we had 2 epidemics exactly alike in their symptoms? They never are alike in different seasons.

2ndly. By visiting the sick and observing nature a knowledge of the pulse only can be acquired. This knowledge, I repeat again, can only be had by frequenting the bedside of our patients. By visiting the sick you acquire a knowledge of the symptoms which cannot be described by books, as the minute variations of the pulse, changes in the countenance, voice and excretions of the urine, etc.

3rdly. By observing nature, the combination of diseases may be learned, and this is never learned from books. No books which I have ever read give an account of these combinations. Thus for instance, how frequently are hysteria and worms complicated together? And what authors will you find teaching the symptoms and cure of this complication? Diseases are described simply and their combinations remain unnoticed.²

4th. By observing nature in preference to books we avoid the acquisition of false theories, source of error in medicine. I think Dr. Cullen justifiable in asserting that you will find ten false facts, for one false theory in medicine.

5th. You will avoid deception, from the propensity of authors to relate miraculous symptoms, and facts of different kinds. Few authors describe a new appearance in a disease without some exaggeration.

6th. By early habits of visiting the sick, you will conquer the reluctance with which sick rooms inspire young practitioners, and subdue these feelings which

often obtrude on the mind at a time when the exclusive consideration of the patient's care is necessary.

7th. The impressions which diseases make on our minds are more durable than the most accurate description either in a lecture or in a book. In a word I would as soon readily believe that a man could learn to swim without entering the water, as that he could learn to cure diseases without attending to the symptoms and various circumstances connected with them. To render my observation on visiting the sick as profitable as I can, I proceed next to make some remarks on the proper methods of conducting yourselves in your attendance on the sick.

1st. Visit your patients at least once a day in acute or dangerous cases. The neglect of this has sometimes made further visits of physicians useless, even where no immediate necessity appeared for doing this.

2nd. Visit them at the same hour every day. By doing this you never surprise them either on their close(t) stool chair or in any situation which would render your visits unpleasant. Again your coming will not surprise them, or disappoint them. You catch your patient, as it were at the moment of hope, and a few words of encouragement dropped from a Physician has often done more good than the most powerful cordials. Hope has a singular influence on sick people. I once knew a lady kept awake a whole night by her Physician's³ having disappointed her by not coming at the appointed hour. Hope should be instilled into the minds of your patient. Believe me, gentlemen, it is of more consequence in some states of the system than all the cordials of the universe.

3rd. Have your medicines administered as soon as possible after (they) are prescribed, the interval is unpleasant to the patient.

4th. Have your medicines put up with care and taste and write your directions in a legible hand. All men cannot write an elegant hand, but there are few who cannot write a legible hand. Numerous and fatal are the consequences of neglecting this. I have known a Physician write a prescription, in which he intended a solution to be made in aqua Fontana and he wrote it aqua Font, but so badly as to be interpreted aqua Fortis. The apothecary used the Nitric Acid—the patient took it and died. Another wrote the words, Vinum Antimoniale, so badly

2. Does not this last paragraph appear a little opposed to Dr. Rush's unity of diseases? (Note of Dr. Mettauer).

3. The author's spelling has been maintained as far as possible in this copy.

as to be mistaken for Vitrum Antimalia. The consequence in this case was also fatal.

Under this head I may also caution you against seeing patients too early in the morning, or too late in the evening. The propriety of this caution must be evident to every delicate mind. Never intrude at meal times.

I hope my next observation may not be so applicable to any present so as to induce him to think it levell'd at him. I must reprove the contempt in which most young physicians hold the office of an apothecary. As well might a man expect to be a general without previously being a soldier, as to be a physician without having been previously an apothecary.

The names of Cullen, Fothergill, and Watson might be sufficient to reprove this foolish pride. All these gentlemen rose to eminence in their profession, and they were all apothecaries' boys and served their time out in apothecaries' shops. I shall date the decline of the utility of our science in this country from this proud and idle spirit. Besides, those patients who have most need of an apothecary are those from whom we derive most of our profits. Hence we find starving physicians in the neighborhood of rich apothecarys.

In chronic complaints a good nurse and a good apothecary are more liberally rewarded, and in fact more really useful than a physician. Permit, therefore, gentlemen, to recommend a strict observance to this caution to be your own apothecary.

5. Never neglect common complaints for uncommon ones. While the celebrated Dr. Hamilton was attending the practice of an hospital at Edinburgh, a patient was admitted that had two heads. The students in general were examining this monster. Hamilton alone was feeling the pulse of a patient with a common intermittent fever. Being asked why he neglected to examine so curious a deviation from nature, he replied he should probably never again meet with the like circumstances, but fevers he would see every day of his life perhaps, and they are consequently of more importance to him in practicing medicine than all the monsters in the universe. In like manner you had better be well instructed in the cure of fevers, than that of cancer or Aneurism or other rare diseases. It would be a matter of comparatively small consequence if all our patients with Cancer were to die, if we could succeed in curing all the fevers which daily pre-

sent themselves to our notice. We meet with 10,000 fevers where we meet with one aneurism.

6. Sit up with your patients at night especially if they be critically situated. Many circumstances of their complaints can be observed by this method which we should otherwise remain ignorant of. The positions of the patient in bed—his heat or coldness (in the extremities)—his respiration and perspiration, nay, all the apparently trifling circumstances give useful hints respecting his disease. The late king of Prussia, we are told, had taken a young nobleman under his care to instruct him in the art of war. He caused him to sit up whole nights or frequently called him up in the course of the night, in order to inure him to hardship. If then so much care is taken to instruct a person in the art of taking away life, with how much greater care and diligence ought we to practice the like hardships in cases where we can restore and preserve life. By pursuing this line of conduct we are able to perform V. S. in critical cases as frequently and as sparingly or copiously as we please, or exhibit Bark Wine, etc., at the most proper times. I once knew a Physician get into handsome practice by curing a patient of an intermittent, sitting up with him at night. By doing this he was able during a remission of the fit to pour in the Bark plentifully and thereby cured him of his complaint.

7. Never cease visiting your patients until they are perfectly cured. Patients are too apt to think themselves well before they are really so. The advice of a physician is necessary to convalescents in several points. Diet, dress, exercise and several other circumstances apparently trifling should now be attended to. Relapses succeed fevers sufficiently often from these causes to warrant our making this remark. It is true that from causes which we cannot foresee or prevent such accidents do now and then result, but the neglect of physicians is too often the shamefull cause of them.

8. Let no avocations of business or pleasure prevent your attendance on patients. When a physician undertakes the care of a patient, he enters into a contract with that patient—the subject of this contract is the life of the patient. The physician's time is mortgaged to his patient and it is unjust for him to be deprived of it, at least his share.

9. In every part of your attendance on patients, endeavor to inspire them with hope and confidence in your prescriptions. The delusions of Mesmer

prove how much is owing to this passion (Hope). Mesmer's anecdote to his apothecary, "conceit can kill and conceit can cure".

10. I hope I need hardly mention the delicacy with which every practitioner should treat the complaints of females whatever may be their rank in life. I have never known a physician, particularly if young, prosper, who was neglectful of the complaints of his female patients, or who treated the sex with any indelicacy. The above particulars are more especially necessary in persons of respectability and rank in life, but they should be observed in private practice. The forms in visiting hospital patients I shall illustrate during my attendance on the hospitals during the ensuing winter. Practicing in hospitals is attended with several conveniences and inconveniences. The conveniences of hospital practice are that medicines are administered with more accuracy than in private practice. The diet and exercise of the patients are regulated according to our wishes—and in general our government over our patients is more perfect than in private practice but these advantages do not compensate for the inconveniences attendant on hospital practice. These are: 1st. The patients are in general such as from their mode of life are much debilitated, and their constitutions much impaired by strong drink and other causes. 2ndly. Patients seldom apply for relief to hospitals except in cases where their cures have been unsuccessfully attempted. Lastly, the bad air-confinement to one room and not sufficient cleanliness constitute a permanent objection to hospital practice. Those who have an opportunity should attend both public and private practice. There again we see the utility of keeping our own medicines—our pupils could not else see our practice on patients. Clinical lectures are of great utility in studying medicine. They were first introduced by Dr. Rutherford into the University and hospitals of Edinburgh. The university owes much of its reputation to the establishment of clinical lectures. Drs. Hair, Stark, and Stahl assisted in promoting the study of medicine at Vienna in this way.

I shall make observations during the winter on such cases as occur in our hospital, either there or from this chair.

I next proceed, gentlemen, to notice the forms necessary to be observed in visiting our patients.

In the first place the utmost respect is to be manifested, and no concern of our own should, as I ob-

served before, prevent our attendance on the sick. As soon as we enter a patient's house, if our religion does not prohibit it⁴, we should take off our hats. The master of the house should be considered as present in every part of it. If his servant appears we are to recollect that he is the representative of his master and is to be treated with respect.

2ndly. If a lady conduct you upstairs recollect always to precede her. The reason for this must be obvious to every one of you. When you arrive at the top of the stairs let the lady precede you and shew you to the chamber of the patient. In coming down stairs walk behind her.

3rdly. When you approach the chamber of your patient, give notice of it by a Hem, cough or some other method. If you can conveniently send word of your arrival it is best to be done. Always knock at the chamber door. Here I must repeat the good effect of visiting your patient at a particular hour. You catch him, as it were, at the moment of hope and a disappointment is to him a serious misfortune.

4thly. In consultations the consulter should go first to his patient's room, even if he be the younger man. The consulted physician should never feel the pulse of the patient till the other has, in the presence of the patient, mentioned the remedies which have been used and a short account of the symptoms. Reason and justice concur in demanding this. If the first physician were to (enter) a minute or two before the consulted it would be better. The consulted physician should not even answer a question without asking the consulter—and the patient should hear the prescriptions.

5thly. Whenever you enter the chamber of your patient sit down in a chair, a trunk, or if there be none in the room, on the bedside of your patient. It shows recollection. Pull off your gloves; if winter your great coat must be laid aside, and if it be wet must not be (taken into) your patient's room. Never feel the pulse of your patient as soon as you enter his room. Dr. Fothergill relates an interesting instance of a physician being discarded for feeling the pulse of a patient with his glove on. Be careful to avoid entering into any conversation with your patient before you feel his pulse. Conversation has a great influence on the pulse. When you have done this the history of his case had better be ac-

4. Might there not be a possible connection here with Dr. Mettauer's extreme reluctance to remove his hat from his head, even on the way to his last earthly resting place? It is entirely possible that he had felt the effect of long contact with the Quakers.

quired from the patient himself. He is certainly the best judge of his disease, though the worst of its cause. His friends must inform you of the last. The following are the questions necessary to be asked: 1st. How long have you been indisposed? 2nd. How, when and where were you first seized? What time of the day and what were you doing when taken? at home, or abroad? walking, sitting, etc.?

3rdly. Your next inquiry should be concerning the remote cause of the disease. Here, as I have just observed, the patient is seldom the proper person to interrogate. His friends, acquaintances, and in some instances, his enemies, should be asked. He will seldom confess that intemperance is the cause, if it even should be.

4thly. Your next questions may be more general, as of the diet, drink, exercise, cloathing of your patient—also his business, pleasures, whether he has been exposed to cold, and many other of the like enquiries, not only with respect to the day for which you are called but for several days previous to his disease. Heat and cold are very common causes of diseases. Sydenham observed this long ago and with great reason. Enquire whether your patient has ever been affected in like manner before. If not what diseases he has been subject to—also his mode of life for a long time before. The gout at 40 is often the consequence of intemperance at 20, or 30, and blindness at 50, of accidents at 30. I once knew a gentleman who was affected with seminal weakness in his old age which he confessed was brought on by the detestable vice of onanism, the practice of which he acquired while a boy at a boarding school. Instances have been known of diseases of the brain on many years after by strokes on the skull. A gentleman once had a violent pain over his right eye, brought on by his school master having lifted him up by his hair at school.

5thly. Had you ever the same disease before? If so, what was the cause and how were you cured? Where were you when sick? Did it alternate with any other disease? Consumption has been known to alternate with rheumatism. If your patient has been relieved of pthisis by rheumatism you had better excite the latter as it is a safer disease than pthisis. Had you ever a cutaneous disease, or issues? If so, did they suddenly disappear? This has frequently been a source of disease, which may be cured perhaps by exciting again the skin disease.

6thly. Never be deceived in the symptoms of dis-

eases by the medicines which have been used. Had your patient a diarrhea? Ask him if he has used any medicines for the purpose of purging himself—salts, castor oil, etc., produce this effect. Black stools, a very alarming symptom of disease, are frequently produced by opium. Disury too has been the effect of this medicine.

7thly. The age of your patient must be known. Particular ages have their particular predispositions to diseases. More especially this must be sought after in females, the catamenia should never be lost sight of in female complaints. From 14 to 15 years of age is the time of their commencement; their continuance from 45 to 50. The peculiar predispositions of the natives of different countries are to be enquired after. Thus Dr. Hillary informs us that the intermittents of the Negroes in Barbados terminated in a swelled leg. A mulatto girl from that island whom I cured of that disease in this city had a swelled leg in consequence. Enquire also the diseases of the patient's ancestors. Many diseases are hereditary and such are more difficultly cured. The most common of these are mania, gout and consumption. The prognoses in these diseases you know is not flattering. Enquire if there are any particular family medicines which have been much used in the complaints of your patients. They are common and should be used before any others.

Enquire about the diet of your patient. Intemperance in this or in drink can only be learned by enquiring of the friends of the sick, or by eating with them occasionally. I once detached the cause of violent bowel complaint, in a lady, by dining with her. I observed that she eat an immense quantity of mustard and pepper, and that all her food was very high(ly) seasoned. The vinegar, which the ladies use when young (in pickles) to keep them from growing too corpulent, has been known to produce very unpleasant consequences in their advanced years.

The king of Prussia, perhaps the greatest glutton that ever existed, who eat almost without cessation, used to say he scarce eat enough to keep soul and body together.

But, gentlemen, I must again repeat the necessity there is in all female complaints of attending to the uterus. And in infants you should never lose sight of teething and worms. So in gluttons and people in high life, I would never lose sight of the gout and in ladies I would never lose sight of the uterus.

These I consider as preliminary observations. Clinical cases in our hospital will afford me an opportunity of illustrating my ideas of predispositions.

I next proceed to treat of the questions to be asked concerning the actual diseases—but this must be the subject of our next lecture.”

The booklet contains twelve lectures. Whereas, he states at the beginning of lecture number two, other men rely upon the color of the skin or other sign of their choice for diagnosis of a patient's disease, he prefers to be guided in this matter by the

condition of the pulse in the main. He then proceeds to discuss his science under the four headings of Physiology, Pathology, Therapeutics and the Practice of Medicine. But from his subsequent remarks on theology and philosophy one infers that he was almost as much interested in these subjects as in the practice of medicine.

Dr. Rush directs his students on occasion to consult his books, various topics being more fully discussed there. I am informed by the Librarian of the University of Pennsylvania that none of Dr. Rush's lectures has ever been published, to the knowledge of any of the University authorities.

CASE OF PNEUMOCOCCIC MENINGITIS WITH RECOVERY.*

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Recovery from pneumococcic meningitis is so rarely encountered that a recent case observed on the ward of St. Philip Hospital stimulated our interest in the disease. The literature has been reviewed and two interesting facts are noted. First, a considerably larger number of cases with recovery were reported than we had anticipated. Between the years 1926 and 1936 thirty-five¹⁻³⁵ cases appear in the literature, and H. S. Goldstein and H. Z. Goldstein³⁷ in a comprehensive review list 150 such cases reported before 1926. The second point of interest was noted in the wide variety of therapeutic agents used (Table).

In the case reported here no treatment was used other than repeated lumbar and cisternal punctures with drainage of the subarachnoid space. Antimeningococcic serum in the amount of ninety cc. was given when the case was first studied; however, when the true identity of the organism was established this was at once discontinued.

In noting the treatment used in thirty-one of the recorded thirty-five cases with recovery, no evidence is offered to establish any one form of treatment as being of significant value. Numerically the use of antipneumococcic serum is the most popular, but

it cannot be shown that its use is more efficacious than repeated and thorough drainage of the subarachnoid space. Kolmer³⁸⁻⁴⁰, who has done extensive experimental work on pneumococcic meningitis in dogs, reports the most satisfactory results from the use of antipneumococcic serum and ethylhydrocupreine injected into the carotid arteries and the cisterna magna. His experimental work, however, has not been given adequate trial in human subjects.

CASE REPORTS

O. C., a colored male, age twenty-four years, was admitted to St. Philip Hospital at 9:30 A.M., September 26, 1936, about an hour after having been rendered unconscious by a blow on the left forehead with a piece of lead pipe. His history otherwise was irrelevant.

On examination he was found to have a laceration three inches in length over the left forehead which exposed the skull, revealing a linear fracture. Both lids of the left eye were swollen and discolored. In addition, there was a slight epistaxis. The remainder of the physical and neurological examination was negative.

The wound was debrided and sutured; the patient was given 1500 units of anti-tetanic serum and admitted to the ward for observation.

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TABLE

| CASE | AUTHOR | SERUM | LUMBAR DRAINAGE | CISTERNAL DRAINAGE | ETHYLHYDRO- CUPREINE SPINAL | | | MISCELLANEOUS |
|------|---------------------------------|---------------------------------------|---------------------|-----------------------|--------------------------------|--------|---|--|
| | | | | | (OPTOCHIN) | LAVAGE | | |
| 1. | Meyer | antimeningococcic 15 cc. | x | x | | | | |
| 2. | Smith | antipneumococcic (Felton) | x (1) | | | | | |
| 3. | Weinberg | | x (1) diagnostic | | | | | Potassium permanganate enemas |
| 4. | Raveno, McLaughlin | antipneumococcic (Felton) | x | x | | | | |
| 5. | Lynch | antipneumococcic (Felton) | | | | | | |
| 6. | McAuley, Hilliard | antipneumococcic (Felton) | | | | | | |
| 7. | Eichelbaum | antipneumococcic (Felton) | x | | | | x | |
| 8. | Mella | | | | | x | x | |
| 9. | Roussel | | x | | | | | Methenamine |
| 10. | Rohrback | antipneumococcic (Felton) | | | | | | |
| 11. | Shuller | | | | | | | Pneumococcic antibody |
| 12. | Harkavy | antipneumococcic (Felton) | | | | | | |
| 13. | Globus, Kasanin | | x | x | | | | |
| 14. | Amesse | | x | | | | | |
| 15. | Bedell | | x | x | | | x | Rubber tissue drain in cistern. |
| 16. | Baron | | x (1) | | | | | No other treat- ment |
| 17. | Harris, Yenikomshian | antipneumococcic antimeningococcic | x | x | | | | 20 cc. 1% mer- curochrome i. v. |
| 18. | Weil | antipneumococcic | x | x | | | | .5% acriflavine hydrochloride, i. v. |
| 19. | Santa Maria, Solis | | | | | x | | |
| 20. | Meio | antipneumococcic | | | | | | |
| 21. | Apfel | antimeningococcic antipneumococcic | x | | | | | Pregl's Sol. (iodine) |
| 22. | Goldberg (1) | antipneumococcic (Felton) | | | | | | Intraventricular irrigation |
| 23. | Goldberg (2) Carbonell, Cook | | | | | x x | | Huntton's anti- body sol. |
| 24. | Simpson | antimeningococcic antipneumococcic | | | | | | |
| 25. | Segers, Schere | antipneumococcic | | | | | | |
| 26. | Norburg | | x (1) | | | | | |
| 27. | Bennett, Meier | | x | | | | | |
| 28. | Stoessiger | | x | | | | | .5% mercurio- chrome, intra- venously and intraspinally |
| 29. | Uhr | | x (2) | | | | | |
| 30. | Clark, J. G. | | x | | | | | |
| 31. | Croft | antipneumococcic intramuscularly | x (1) | | | | | |

X-ray examination of the skull showed only the linear fracture without evidence of depression of either the outer or inner tables. Laboratory studies were negative except for a leucocytosis of 23,100 cells.

The patient remained in the hospital for twelve days during which time he complained of moderate headache during the first week and had a recurrence of the epistaxis on October 1, 1936. Otherwise, his hospital stay was uneventful and he was discharged

in good condition, the wound having healed by primary intention.

On October 27, 1936, he was re-admitted to the hospital in a semi-conscious and irrational condition. The following history was obtained from his relatives: After leaving the hospital the patient had been in good health and normal in every respect except for a constant drainage of clear fluid from his nose. Three days before re-admission he developed a sore throat and head cold. On October 26, 1937, the drainage from his nose suddenly stopped and he began to complain of headache, nausea and stiffness of the neck. Within two hours after this onset he was semi-conscious and irrational, remaining in this condition until admission to the hospital.

Physical examination revealed a well-developed and well-nourished individual who was irrational, restless and completely uncooperative. The head was negative except for the healed scar over the left eye. There was no evidence of ocular palsy, pupillary irregularity or pathological changes in the fundus. The neck was rigid and any attempt at flexion caused excruciating pain. The throat was mildly injected and the mucous membrane was dry. There was no evidence of cardiac hypertrophy, the rate was ninety-six per minute, the rhythm regular, and there were no murmurs. The blood pressure was 110/70. Examination of the lungs was unsatisfactory because of lack of cooperation on the part of the patient, but no pathological changes were noted. The tendon reflexes were normal or slightly hypoactive and there was no evidence of pyramidal tract involvement. Kernig's sign was positive.

A spinal puncture was performed and cloudy fluid under increased tension was obtained. A cell count showed 2,275 white blood cells per cm., 91 per cent of which were polymorphonuclear cells. The identification of the causative organism was not made by the interne who examined the fluid and it was thought wise to treat the patient as a case of meningococcic meningitis. During the next twenty-four hours he received 30 cc. of antimeningococcic serum intraspinally and 60 cc. intramuscularly. By this time culture of the fluid showed the organism to be a pneumococcus but attempts made to classify it as Type I, II, III, IV, XII or XIV were not successful. No other typing sera were available. Administration of the antimeningococcic serum was discontinued.

Following this accumulation of data, subsequent treatment consisted of spinal drainage at twelve-hour intervals and general supportive measures. Pneumococci were cultured daily from this fluid. Although no signs or symptoms appeared to implicate the sinuses, an X-ray examination on November 27, 1936, showed clouding of the cells of the left frontal sinus. The possibility of this location as the focus of the infection was considered and, after careful deliberation, this sinus was explored. No pus was encountered but a small depressed fracture was found and a fragment of bone removed. The underlying dura was described as being hyperemic but not distended.

His course following this procedure was quite stormy and he continued to have a temperature elevation varying between 98 degrees F. and 104 degrees F. As a rule when his temperature reached a level of 103 or above he would be irrational and apparently in a critical condition. A spinal or cisternal puncture would be performed with drainage of from 15-100 cc. of cloudy fluid and within twelve hours the patient would be rational, cheerful and enjoying a general diet or a cigar of which he was particularly fond. By this time any systematic scheme of spinal drainage was discarded and lumbar or cisternal punctures were done only as a change in the patient's condition indicated. Each specimen of spinal fluid was cultured and each continued to show the presence of pneumococci. The cell count remained high, varying between 200 and 3000 cells with a polymorphonuclear count always above 75 per cent. The last spinal puncture, done on February 2, 1937, was still positive for pneumococci. On February 5, 1937, his temperature dropped suddenly from 104 degrees F. to 96 degrees F. and thereafter never exceeded 100 degrees F. until discharge from the hospital March 3, 1937, being normal or subnormal for seven days prior to this date. The patient was hospitalized for 129 days and during this period received eighty-two spinal and ten cisternal punctures. On February 2, 1937, the last lumbar puncture was done and, although it was still positive for pneumococci, the dramatic change in the patient's condition occurred three days later and it was thought inadvisable to molest the subarachnoid space again. Following discharge from the hospital, the patient was seen at intervals of two to three weeks in the out-patient department where complete physical ex-

amination failed to reveal any residual effects of the disease. After this he fell from view, but he was contacted in November, 1937, by the Social Service Department and was found to have returned to work and to be in normal health.

CONCLUSIONS

1. A case of pneumococcic meningitis secondary to fracture of the skull and cribriform plate with recovery is reported.

2. The literature between 1926 and 1936 has been reviewed and thirty-five reported cases of pneumococcic meningitis with recovery found.

3. The treatment used in thirty-one of these cases has been tabulated.

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Public Health Statistics

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia.

The report of the State Health Department's bureau of communicable diseases, as compiled for the month of April, shows the following cases compared with the same month in 1937.

| | 1938 | 1937 |
|-----------------------------------|-------|-------|
| Typhoid and Paratyphoid ----- | 15 | 20 |
| Diphtheria ----- | 46 | 42 |
| Scarlet Fever ----- | 146 | 60 |
| Measles ----- | 2,462 | 1,882 |
| Meningitis ----- | 9 | 44 |
| Poliomyelitis ----- | 2 | 3 |
| Rocky Mountain Spotted Fever----- | 0 | 0 |
| Typhus Fever ----- | 0 | 0 |
| Undulant Fever ----- | 5 | 5 |
| Tularemia ----- | 0 | 1 |
| Smallpox ----- | 0 | 2 |

TUBERCULOSIS STUDY OF SCHOOL CHILDREN IN NORTHUMBERLAND COUNTY

The State Department of Health recently instituted a tuberculosis study among the Northumberland County school children. This work has been undertaken to obtain, if possible, definite information on the value of the Vollmer-Patch tuberculin test as compared to the intradermal method.

Fourteen hundred children were given the test simultaneously. Approximately nine hundred reacted positively and were X-rayed with the rapid method using paper films.

The Department expects to obtain information on this study which can be applied in other counties among children of school age. Final results as yet have not been tabulated. Figures will be published at a later date.

TYPHOID FEVER

As is well known, the typhoid fever incidence invariably increases in the summer season, cases usually reaching their maximum in July, August and September.

In July, 1936, fifty-nine cases were reported and for the similar month in 1937, one hundred and forty-two. August, 1936, showed a total of 106, while August, 1937, had an aggregate of 116. There were ninety-nine cases in September, 1936, and seventy-three in 1937 for the same period.

Too much emphasis cannot be placed upon the necessity of travelers and excursionists generally using precaution against contracting typhoid. While the medical profession appreciates the value of anti-typhoid vaccine for those who travel in foreign countries or in remote localities of the United States, it is difficult to convert the public to this type of prophylaxis. Education appears to be much needed.

Moreover, the public should be urged to be circumspect when on shorter journeys and camping tours. Lacking approved water supplies all drinking water should be boiled for at least twenty-minutes or in lieu thereof a drop of iodine added to every quart of water intended for drinking purposes.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. JAMES B. STONE, 15 Maxwell Road, Richmond.

President-Elect—MRS. HAWES CAMPBELL, Venter.

Corresponding Secretary—MRS. LAWRENCE O. SNEAD, 5307 New Kent Road, Richmond.

Recording Secretary—MRS. JAMES K. HALL, 3011 Seminary Avenue, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, 2502 Hawthorne Avenue, Richmond.

Chairman of Publicity—MRS. FRED J. WAMPLER, 4103 Forest Hill Avenue, Richmond.

Dr. Wright, Sr.—An Appreciation.

With saddened hearts and stunned minds the members of the Auxiliary to the Medical Society of Virginia learned of the death on May 8 of Dr. Fletcher J. Wright, Sr., of Petersburg. Dr. Wright, who at the time of his death was chairman of the Auxiliary Advisory Council, had long been a friend of our organization. He was never too busy to lend

a sympathetic and understanding ear to our troubles and was ever ready to give us the benefit of his wise counsel. His helpful kindness will be sadly missed by those who had the privilege of working with him and our entire organization suffers a great loss at his passing. We take comfort in the knowledge that he has gone on to a higher service. To his widow, our former state president and a faithful worker for the cause for which we stand, and to his family the Auxiliary to the Medical Society of Virginia extends its deepest sympathy.

J. W. S.

RESOLUTIONS ON DEATH OF DR. WRIGHT

At a special meeting of the Petersburg Unit of the Woman's Auxiliary of the Fourth District Medical Society, the following resolutions were unanimously adopted:

WHEREAS, by divine will, Dr. Fletcher J. Wright, Sr., husband of the president of this auxiliary, departed this life on May 8, 1938, and

WHEREAS, he was a generous, accomplished, and diligent physician, and

WHEREAS, he was our friend, and the Chairman of the Advisory Council of our State Auxiliary, NOW THEREFORE BE IT RESOLVED

1. That we express our profound sorrow at his passing, and our sympathy to his family.
2. That an additional ten dollars be contributed to the support of the tuberculosis bed for physicians at Blue Ridge Sanatorium this year in honor of the memory of Dr. Wright.
3. That these resolutions be recorded in our minutes.
4. That these resolutions be published in the VIRGINIA MEDICAL MONTHLY, and in the local newspapers.
5. That a copy of these resolutions be sent to his family.

Committee:

DOROTHY JACOBSON, *Chairman*
MARION EDMUNDS
CATHERINE JONES
CAROLINE CLARKSON

News from Auxiliaries.

MID-TIDEWATER

The April meeting of the Woman's Auxiliary to the Mid-Tidewater Medical Society met at the home of Dr. and Mrs. H. F. Hoskins, Saluda, on April 26, with Mrs. Hawes Campbell presiding. After a short business session, the following program and doctors' memorial service was given:

| | |
|--|---------------------|
| A DOCTOR'S PRAYER..... | Mrs. Hawes Campbell |
| A POEM, THE DOCTOR | Mrs. Horace Hoskins |
| THE COUNTRY DOCTOR | Mrs. Horace Hoskins |
| LIVES OF LOUIS PASTEUR AND MADAME CURIE, | |
| | Mrs. Paul Pearson |
| MILE STONES IN MEDICINE | Mrs. J. W. Smith |
| STATE MEDICINE { Affirmative..... | Mrs. M. H. Harris |
| { Negative..... | Mrs. W. S. Cox |

The Auxiliary was most fortunate and happy to have as a guest of honor our state president, Mrs. J. B. Stone, of Richmond, who gave a talk on "The Workings of an Auxiliary", which was very interesting and inspiring. We learned much of what our sister auxiliaries are doing.

After a delicious luncheon at Mrs. Blakey's, the meeting adjourned to meet again in July at Gloucester.

(MRS. PAUL) VIRGINIA MCG. PEARSON,
Corresponding Secretary.

NORTHAMPTON-ACCOMAC

The last regular meeting of the Auxiliary to the Northampton-Accomac Medical Societies was held at the home of Mrs. J. L. Decormis, in Accomac, with fifteen members present.

The following interesting talks were given:

| | |
|-------------------------|---------------------|
| HEALTH EDUCATION..... | Mrs. R. J. White |
| HYGEIA MAGAZINE..... | Mrs. W. J. Sturgis |
| THE TUBERCULAR BED..... | Mrs. O. R. Fletcher |

We made a contribution of twenty dollars for the tubercular bed.

Our hospital being our chief objective, we were very glad to have a splendid report from its superintendent, Miss Evelyn Heath.

One new member was taken in, making a total of five for the year.

We extend our congratulations to one of our members, Mrs. W. B. Trower, upon the birth of a daughter.

Our June meeting will be a picnic to which the doctors of the two societies will be invited.

(MRS. J. MORTIMER) SUSIE N. LYNCH,
Corresponding Secretary.

PETERSBURG

The Petersburg Medical Auxiliary held its monthly meeting April 26 at the Nurse's Home, when "Doctor's Day" was observed, as requested by the American Medical Auxiliary for auxiliaries all over America. This was observed by the local physicians' wives in the form of a memorial service to two well-known doctors who rendered great service to Petersburg fifty years ago, Dr. Robert D. McIlwaine and Dr. Herbert Claiborne, both of whom died in 1905, and to four physicians who have died in Petersburg during the last year, Drs. Hargrave, Perkins, Reese and Hoy.

A sketch of Dr. McIlwaine's life and many trib-

utes of loving appreciation were read by Mrs. Meade Edmunds, and Mrs. Herbert Claiborne Jones, whose husband is a namesake, read a sketch of the life and work of Dr. Claiborne. Mrs. Jones also read excerpts from a book written by this much loved and honored physician, which was published before his death, and a most interesting article, "The Obligations of a Doctor's Wife", taken from another of Dr. Claiborne's writings, "The Old Virginia Doctor".

Miss Charlotte Snead gave the following appropriate readings, "Eulogy of the Doctor" by Robert Louis Stevenson, "My Doctor" by Daisy Gilbert, and a lovely poem, "Pastor and Doctor".

Miss Mary Plummer McIlwaine, daughter of one of the doctors eulogized, was a guest of the Auxiliary for this meeting. The fact that wives, sisters and daughters are eligible for membership to any Medical Auxiliary, makes Miss McIlwaine doubly eligible, to become a member, and so she was not only invited to become a member, but was requested to act as historian for the local Auxiliary and to compile a brief history of the lives and works of the outstanding physicians who have died in their medical ministry to Petersburg.

Truth About Medicine

In addition to the articles previously enumerated, the following have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association:

Cheplin Biological Laboratories

Cheplin's Epinephrine Hydrochloride Solution, 1:1000, 10 cc.

Cheplin's Epinephrine Hydrochloride Solution, 1:1000, 30 cc.

Lederle Laboratories

Viosterol (A. R. P. I. Process) in Oil.

Eli Lilly & Co.

Ampoules Metycaine 10 per cent for Spinal Anesthesia.

Ampoules Metycaine 20 per cent for Infiltration and Regional Anesthesia.

Parke, Davis & Co.

Cevitamic Acid—P. D. & Co.

Tablets Cevitamic Acid—P. D. & Co., 25 mg.

New and Nonofficial Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Sulfanilamide Tablets, $7\frac{1}{2}$ grains.—Each tablet con-

tains sulfanilamide—Lilly (New and Nonofficial Remedies, 1938, p. 453), $7\frac{1}{2}$ grains. Eli Lilly & Co., Indianapolis, Ind.

Solution of Adrenalin Chloride 1:100, 5 cc. vials.—A solution containing one part adrenalin (as adrenalin chloride) (New and Nonofficial Remedies, 1938, p. 231) in eleven parts of physiological solution of sodium chloride preserved by the addition of 0.5 per cent of chloretone and not more than 0.1 per cent of sodium bisulfite. Recent evidence indicates that the oral inhalation of a solution of epinephrine ten times stronger than those used by hypodermic injection gives relief in acute attacks of bronchial asthma when other measures fail. Every precaution must be taken to avoid confusion between this solution (1:100) and the official 1:1,000 solution of epinephrine hydrochloride, since the 1:100 solution is not suitable for hypodermic use and should never be employed in that manner. Parke, Davis & Co., Detroit, Mich.

Sulfanilamide Tablets, $7\frac{1}{2}$ grains.—Each tablet contains sulfanilamide—P. D. & Co. (New and Nonofficial Remedies, 1938, p. 231) $7\frac{1}{2}$ grains. Parke, Davis & Co., Detroit, Mich. (*J. A. M. A.*, April 9, 1938, p. 1193.)

Staphylococcus Toxoid—P. D. & Co.—A detoxified staphylococcus toxin (New and Nonofficial Remedies, 1938, p. 422) prepared by treatment of the toxin with a 0.3 per cent formaldehyde solution at 37 C. The material is preserved with 0.01 per cent merthiolate (sodium ethylmercuri thiosalicylate) and the usual sterility tests required by the National Institute of Health are made. Staphylococcus toxoid is tested for dermo-necrotic and lethal innocuity according to methods outlined by the National Institute of Health. Each of the two strengths is marketed in 5 cc. rubber diaphragm stoppered bottles. Parke, Davis & Co., Detroit, Mich.

Hypodermic Tablets Dilaudid Hydrochloride, 1 mg. (1/64 grain).—Each tablet contains dilaudid hydrochloride (New and Nonofficial Remedies, 1938, p. 317) 1 mg. (1/64 grain). Bilhuber-Knoll Corporation, Jersey City, N. J.

Hypodermic Tablets Dilaudid Hydrochloride, 1.25 mg. (1/48 grain).—Each tablet contains dilaudid hydrochloride (New and Nonofficial Remedies, 1938, p. 317) 1.25 mg. (1/48 grain). Bilhuber-Knoll Corporation, Jersey City, N. J.

Propaganda for Reform

Pellagra and Nicotinic Acid.—After the discovery of the effectiveness of nicotinic acid and its amide in the treatment of blacktongue in dogs had been described, it was prophesied that the usefulness of these compounds in the treatment of pellagra soon would be investigated. Although the publication of Elvehjem and his collaborators occurred in September, a time of the year when the incidence of pellagra is on the wane, commercial nicotinic acid has been tested already on a number of pellagrins in at least three widely separate localities. There now have appeared reports from Durham, N. C., Cincinnati and Indianapolis. These reports agree in ascribing a prompt curative effect to nicotinic acid. It should be emphasized that all three groups of workers have reported undesirable reactions from taking nicotinic acid. The India-

napolis investigators stated that following the oral administration of nicotinic acid, in the dosages used by them, the patients noted sensations of heat and tingling of the skin. There was a distinct dilatation of peripheral blood vessels during this time, but the fall in blood pressure was only slight and temporary. The Durham investigators found that in doses of 60 mg. there was no reaction following oral administration of the drug. After intramuscular or intravenous injection, however, a marked flushing of the skin was observed. Spies and his collaborators likewise observed flushing, itching and tingling of the face, trunk and extremities following the oral administration of therapeutic doses of nicotinic acid. It is evident that more information is necessary before the usefulness of nicotinic acid in the treatment of pellagra can be evaluated. The evidence so far seems promising. (*J. A. M. A.*, January 22, 1938, p. 289.)

Book Announcements

New Books.

Recent acquisitions in the Library of the Medical College of Virginia, available to our readers are:

- Assoc. for Res. in Nervous and Mental Disease—Tumors of the Nervous System.
 Bauer & Hull—Health Education of the Public.
 Bigger, J. W.—Handbook of Hygiene.
 Blatz *et al*—Collected Studies on the Dionne Quintuplets.
 Browning, E.—Toxicity of Industrial Organic Solvents.
 Cannon, W. B.—Wound Shock and Hemorrhage.
 Chambers, J. S.—The Conquest of Cholera.
 Coignard, J.—The Spectacle of a Man.
 Crothers, B.—A Pediatrician in Search of Mental Hygiene.
 Donaldson, S. W.—The Roentgenologist in Court.
 Ellis, H.—Sex in Relation to Society.
 Fisher, C. *et al*—Diabetes Insipidus and the Neuro-Hormonal Control of Water Balance.
 The Fumigation of Ships With Hydrogen Cyanide.
 Gray, G. W.—The Advancing Front of Science.
 Haldane, J. B. S.—Hereditry and Politics.
 Holck, H. G. O.—Diet and Efficiency.
 Holmes, E.—The Metabolism of Living Tissues.
 Hooton, E. A.—Apes, Men and Morons.
 Horsburgh & Heath—Atlas of Cat Anatomy.
 Huntington, E.—Season of Birth.
 Hurd-Mead, K. C.—A History of Women in Medicine.
 Hyde, R.—Laboratory Outline in Filterable Viruses.
 Imperatori & Burman—Diseases of the Nose and Throat.
 Jacobson, E.—You Must Relax.
 Jones, C. M.—Digestive Tract Pain.
 Levene & Bass—Nucleic Acids.
 Mainland, W. F.—German for Students of Medicine and Science.
 Mayer, A.—La Vie.
 The Medical Uses of Radium. Med. Res. Council Spec. Rep. No. 226.

- Morley, J.—Abdominal Pain.
 Neymann, C. A.—Artificial Fever.
 Ridgway, J. L.—Scientific Illustration.
 Roberts, L. J.—Nutrition Work With Children.
 Rogers, L.—The Truth About Vivisection.
 Sayles, M. B.—Substitute Parents.
 Schindler, R.—Gastroscopy.
 Simon, C. M.—The Share-Cropper.
 Simons, E. J.—Primary Carcinoma of the Lung.
 Stimson, P. M.—Common Contagious Diseases.
 Strecker & Chambers—Alcohol; One Man's Meat.
 White, B.—The Biology of Pneumococcus.
 Young, H.—Genital Abnormalities, Hermaphroditism and Related Adrenal Diseases.

The Compleat Pediatrician. Practical, Diagnostic, Therapeutic and Preventive Pediatrics. Second, completely rewritten edition. For the Use of Medical Students, Internes, General Practitioners, and Pediatricians. WILBURT C. DAVISON, M. A., D. Sc., M. D., Professor of Pediatrics, Duke University School of Medicine, and Pediatrician, Duke Hospital; Formerly Acting Head of Department of Pediatrics, Johns Hopkins University School of Medicine; Fellow of American Academy of Pediatrics; etc. Durham, N. C. Printed by Seeman Printery for Duke University Press. 1938. Octavo of vi-250 pages. Cloth. Price, \$3.75.

The second edition of the "Compleat Pediatrician" has been published and, upon reading through its pages, it will be noticed that there is some change in the arrangement of the subject matter which makes the book more readable.

The diseases described, instead of being listed alphabetically, are classified into groups, such as those relating to the respiratory tract, gastro-intestinal tract, etc., rendering information more accessible. In the chapters dealing with the group diseases, there is presented a list of symptoms followed by a short description of the diseases related to this group. Each disease description is followed by information about laboratory procedures, differential diagnosis, treatment and prevention pertaining to this disease or condition. Cross indexing is carried out as in the first edition. The following chapters are assigned to laboratory and other procedures, nutritional requirements, feeding and diets, general treatment and nursing, growth development and care of the child, history taking and physical examinations, and drugs and prescriptions. A bibliography is inserted at the back of the book.

This edition is revised to contain the recent knowledge of pediatrics, along with the above changes. It can be said that the author has again presented a good text which should be of immense value to the general practitioner as well as pediatricists for ready reference.

L. E. S.

Virginia Medical Monthly

Founded by LONDON B. EDWARDS, M. D., April, 1874
Owned by MEDICAL SOCIETY OF VIRGINIA since November, 1919

WYNDHAM B. BLANTON, M. D., *Editor*
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All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Subscription Price: \$2.00 per annum in advance. Single Copies 25c.

VOLUME 65

JUNE, 1938

No. 6

Editorial

The Control of Syphilis Gets Under Way.

Syphilis is one of the great American diseases. One out of every ten of us contracts it. It is estimated that there are ten million American syphilitics. Syphilis need not affect so many of us. We know its cause and we know how to cure it. The Scandinavian countries utilizing the same knowledge that we possess have within recent years reduced the incidence of this disease among their peoples to 10 per cent of its former proportions.

When Dr. Thomas Parran assumed office as Surgeon General of the United States Public Health Service, he made a nation wide fight against syphilis a major part of his program. The four objectives of his control program have been briefly summarized as follows:

1. Provision of adequate diagnostic and treatment facilities.
2. Improvement in case reporting and the supervision of cases.
3. Intensive and complete investigation of cases and contacts.
4. Professional and public education in matters pertaining to social hygiene.

The fight against syphilis goes on. Everywhere there is a war of words against it, in books and in the public press. In Chicago mass interest crystallized not long ago in an antisiphilis street parade joined in by people of a great variety of ages and colors, and by both sexes. About the same time a

referendum was conducted by the United States Public Health Service, the Chicago Board of Health and other agencies, to determine whether the citizens would like to be given without expense by their own physicians a blood test for syphilis. Of course there is danger of such intensive propaganda over-shooting the mark and getting ahead of the facilities for service; not to speak of the risk of rendering the public less receptive through an overdose of being told what to do, but it is certainly an improvement over the old attitude of shamed silence.

The repercussions of this national antisiphilis fight have of course been felt in Virginia, although we have had less fanfare and no bargain Wassermann days. In 1936 the Medical Society of Virginia, through its president, promptly acceded to Dr. Parran's wishes to set up a committee to review the question of syphilis control and authorized it to report at a later meeting. The excellent summary of the findings and recommendations of this committee were subsequently approved by the Society and in printed form they may be found in the April 1937 issue of the VIRGINIA MEDICAL MONTHLY.

But the activity of the MEDICAL SOCIETY OF VIRGINIA has apparently been little felt in the state at large or by the Legislature, a body which has seemed singularly free from concern over the whole venereal disease question in Virginia, and which has shown little disposition to vote funds to insure the control of the disease within our borders. It would seem

that not yet have our Society's committees perfected the techniques necessary to translate their decisions into an irresistible leadership of public opinion.

In the State Board of Health, however, there has been evidence of considerable interest and activity. The recent decision to furnish all physicians in the state with equipment for mailing material for dark field examination was a timely one. From what source the interest in syphilis in the Virginia press arises, or who is responsible for the interest in the subject on the part of many civic organizations in Virginia, we do not know.

In the spring of 1937 an important survey of the venereal disease situation in Richmond was undertaken by the United States Public Health Service in response to requests from the Richmond Academy of Medicine and other Richmond agencies. The results of that investigation also were published in the VIRGINIA MEDICAL MONTHLY. It was shown that there was no department for venereal control in the set-up of the city Department of Health; that only \$4,750 was spent annually in venereal control; that in spite of a state law requiring it, neither the physicians nor the hospitals of the city were reporting cases of venereal disease; and that in the public clinics, whereas many individual treatments were given for venereal disease, personnel was insufficient, records were meagre, laboratory diagnosis was not cross checked, and the follow-up system was utterly inadequate. This indictment could probably have been made of many other cities in Virginia. In fact an official high in the Public Health Service, speaking before the Medical Society of Virginia about a year ago, described the syphilis clinic in one of them as "an arsphenamin filling station."

About a year after the Richmond survey, physicians of the city received franked report cards and instructions on how to advise the Department of Health concerning venereal disease in their practice. Recently another encouraging move has been made. The office of Venereal Disease Control has been created in Richmond and Dr. Francis Upshur has been placed in charge. The creation of this office is probably the most important single step that has ever been taken in this state in the control of venereal disease. It is devoutly to be hoped that it may be a permanent office.

Several years ago in one of our Southern states a representative sampling of 500 negroes who had syphilis was taken. Only 14 per cent had received

any treatment and in less than 3 per cent was treatment at all adequate. The survey in Richmond showed that whereas 26,218 injections of arsphenamin were given in the Out Patient Department of the Medical College of Virginia in 1935 in only 17 per cent of the cases were the treatments completed. The lapsed cases and the undiscovered contacts represent the real problem of venereal control.

It is expected that so far as Richmond is concerned Dr. Upshur and his assistants will see that most cases carry through their treatment to a cure and that exposed persons are brought under control by force if necessary. This will materially reduce the venereal population of Richmond which has been estimated to be as high as 25,000.

City and county medical societies throughout the state could find no better way to achieve their deserved leadership in medical affairs for the good of all concerned than by taking immediate steps in their own locale to have created similar offices of venereal disease control.

Group Hospital Insurance on the Increase.

When Group Hospital Insurance was begun in Virginia three years ago there were some who doubted the soundness of the principles involved and many who feared that the venture would fail. Today there is every reason to believe that group hospital insurance from a financial point of view is a success in Virginia. In the state today there are 40,000 persons who are participating in this plan. In Richmond there are 18,000, and 100 hospitals beds are kept occupied every day by the recipients of the benefits of the plan. New members are being added in Richmond alone at the rate of more than 1,000 a month.

The success of hospital insurance has permitted an annual broadening of the contract so that now under it one may obtain emergency treatment in any hospital in the world; members of the insured's family may be included in the plan at reduced rates; and the number of days of hospital care has been increased by adding extra days for each year a contract has been in force continuously. A person who was entitled to twenty-one days hospitalization in the first year now may receive as much as thirty-five days hospitalization in the fifth year if his contract remains continuously in force.

The plan has been adopted in other cities than Richmond. In Norfolk, Roanoke, Lynchburg, and

Winchester it is on a firm foundation. It is being tried in Alexandria and in Danville and in the hospitals of Southwestern and Eastern Virginia.

Three years of course is too short a time to estimate to what extent this movement will grow but it seems likely that in the near future a very large proportion of all hospitalized patients who formerly paid for their hospitalization out of their own pockets will be taken care of under this popular and economical plan, a plan which now costs a minimum of eighty-five cents a month for an individual and a maximum of \$2.00 a month for a family and its dependent minors.

Hospital insurance is not to be confused with

health insurance. The former is a non-profit community service, managed largely by physicians, which does not interfere with the free choice of doctor by patient, and which is entirely devoid of political manipulation or Federal control. The latter has dangers too well recognized to deserve serious discussion any longer in a medical journal. It should give the medical profession of Virginia satisfaction that hospital insurance in this State originated in their midst. It is a good witness to the seriousness of their intention to face in forthright fashion one of the complex socio-economic problems of their time and to their ability to manage their own medical affairs.

Department of Clinical and Medical Education of the Medical Society of Virginia

Medical School Clinics.

At both the Medical College of Virginia and the University of Virginia postgraduate clinics were held in April. Both were well attended as is shown by the reports which follow.

The clinics at the University were in the form of a symposium on the endocrine glands, with the fol-

lowing lecturers: Dr. Alfred Chanutin, Dr. J. M. Meredith, Dr. Edward Corey, Dr. H. B. Mulholland and Dr. E. P. Lehman, of the University of Virginia, and Dr. Emil Novak, Associate in Clinical Gynecology at Johns Hopkins Hospital.

Visitors in attendance at the University clinics were:

Dr. J. F. Repass, Wytheville
Dr. J. E. Gardner, Roanoke
Dr. A. M. Groseclose, Roanoke
Dr. C. D. Bennett, Chatham
Dr. J. G. Brown, Woodville
Dr. A. A. Sizer, Schuyler
Dr. N. B. Jeter, Covington
Dr. C. H. Iden, Berryville
Dr. Homer E. Clarke, Massie's Mills
Dr. W. F. Hartman, Swoope
Dr. O. H. McClung, Lexington
Dr. Francis Lee Thurman, Buena Vista
Dr. J. E. Cox, Waynesboro
Dr. R. N. Caldwell, Galax
Dr. Douglas Boyce, Rural Retreat
Dr. P. G. Hundley, Lynchburg
Dr. W. R. White, Culpeper
Dr. Mary Harley, Sweetbriar
Dr. Carol Rice, Sweetbriar
Dr. Powell G. Dillard, Lynchburg
Dr. W. S. Ferguson, Lynchburg
Dr. C. B. Ransone, Roanoke
Dr. J. W. Preston, Roanoke
Dr. Albert Stone, Roanoke

Dr. E. F. Flora, Roanoke
Dr. F. O. Plunkett, Lynchburg
Dr. E. G. Scott, Lynchburg
Dr. J. J. Neal, Danville
Mrs. C. B. Ransone, Roanoke
Dr. B. F. Randolph, Arrington
Dr. R. W. Garnett, Danville
Dr. Rachel Weems, Harrisonburg
Dr. S. Newman, Danville
Dr. R. D. Glasser, Norfolk
Dr. Joseph Bear, Richmond
Dr. J. J. Waff, Shenandoah
Dr. R. E. Booker, Lottsburg
Dr. C. L. Booker, Lottsburg
Dr. Rex Blankenship, Richmond
Dr. O. B. Darden, Richmond
Dr. Lewis Kolipinski, Petersburg
Dr. H. T. Chelf, Culpeper.
Dr. R. C. Allison, Petersburg
Dr. R. W. Vaughan, Richmond
Dr. M. L. Boyle, Richmond
Dr. S. M. Cottrell, Richmond
Dr. R. A. Nichols, Jr., Richmond
Dr. L. L. Shamburger, Richmond

Dr. John E. Cole, Fredericksburg
Dr. L. F. Lee, Fredericksburg
Dr. Anita Lotti, Charlottesville
Dr. M. M. Pinckney, Richmond
Dr. Frank Stafford, Blue Ridge Sanatorium
Dr. W. E. Brown, Blue Ridge Sanatorium
Dr. W. A. Brumfield, Farmville
Dr. M. P. Cocke, Charlottesville
Dr. Frank Daniel, Charlottesville
Dr. H. L. Baptist, Ivy
Dr. Glenn C. Campbell, Staunton
Dr. B. H. Payne, Staunton
Dr. H. P. Brown, Lynchburg
Dr. F. R. Hodges, Lynchburg
Dr. F. R. Hodges, Jr., Lynchburg
Dr. L. G. Roberts, Moorman's River
Dr. E. B. Robertson, Danville
Dr. M. G. Karrel, Montreal, Canada
Dr. D. E. Watkins, Waynesboro
Dr. W. E. Jennings, Danville
Dr. D. R. Lyman, Wallingford, Conn.
Dr. J. E. Wine, Harrisonburg

Dr. Lewis Holladay, Orange
 Dr. E. D. Davis, Crozet
 Dr. O. N. Shelton, Orange
 Dr. I. H. Hurt, Roanoke

Dr. F. A. Farmer, Roanoke
 Dr. Percy Harris, Scottsville
 Dr. W. H. Paine, Charlottesville
 Dr. H. I. Slate, Farmville

Dr. F. R. Crawford, Farmville
 Dr. W. A. Murphy, Staunton
 Dr. Alex Robertson, Staunton

The symposium of the Centennial year of the Medical College of Virginia was held in conjunction with the Stuart McGuire Lectures on April 28, 29, and 30. Dr. George R. Minot, Professor of Medicine, Harvard Medical School and Director of Thorndike Memorial Laboratory delivered the Stuart McGuire Lectures. The following addressed the

Friday and Saturday sessions: Dr. H. E. Jordan, University of Virginia; Dr. O. H. Perry Pepper, Philadelphia; Dr. Nathan Rosenthal, New York; Dr. Alexis F. Hartmann, St. Louis; Dr. Harvey B. Stone, Baltimore; Dr. Edward D. Churchill, Boston; and Dr. Walter Bauer, Boston.

Those who registered at these sessions were:

Dr. E. L. Alexander, Newport News
 Dr. S. A. Anderson, Richmond
 Dr. T. A. Anderson, Richmond
 Dr. Frank L. Apperly, Richmond
 Dr. L. H. Apperson, Richmond
 Dr. C. C. Bailey, Charlottesville
 Dr. Harvie S. Baker, Norfolk
 Dr. James P. Baker, Richmond
 Dr. Allen Barker, Petersburg
 Dr. Walter Bauer, Boston, Mass.
 Dr. Mary Baughman, Richmond
 Dr. Thomas Beath, Richmond
 Dr. William Bickers, Richmond
 Dr. I. A. Bigger, Richmond
 Dr. Karl S. Blackwell, Richmond
 Dr. Charles A. Blanton, Richmond
 Dr. H. Wallace Blanton, Richmond
 Dr. Nathan Bloom, Richmond
 Dr. D. Coleman Booker, Richmond
 Dr. W. E. Bray, Charlottesville
 Dr. A. G. Brown, III, Richmond
 Dr. H. C. Brownley, Lynchburg
 Dr. E. W. Buckingham, Newport News
 Dr. R. D. Butterworth, Richmond
 Dr. Ernest P. Buxton, Richmond
 Dr. C. Howard Cain, Petersburg
 Dr. H. Cantor, Petersburg
 Dr. C. M. Caravati, Richmond
 Dr. B. L. Carleton, Newport News
 Dr. W. E. Chapin, Richmond
 Dr. C. C. Chewning, Jr., Bowling Green
 Dr. E. D. Churchill, Boston, Mass.
 Dr. B. S. Clements, Matoaka, W. Va.
 Dr. C. C. Coleman, Richmond
 Dr. J. E. Collier, Richmond
 Dr. J. B. Dalton, Richmond
 Dr. Don S. Daniel, Richmond
 Dr. H. S. Daniel, Louisa
 Dr. T. Dewey Davis, Richmond
 Dr. R. M. DeHart, Christiansburg
 Dr. E. A. Delarue, Richmond
 Dr. A. I. Dodson, Richmond
 Dr. J. N. Dudley, Eastville
 Dr. M. C. Edmunds, Petersburg
 Dr. Everett Evans, Philadelphia, Pa.

Dr. W. F. Evans, Charlottesville
 Dr. W. H. Evans, Richmond
 Dr. Charles A. Faber, Ft. Monroe
 Dr. D. M. Faulkner, Richmond
 Dr. Ernest Fischer, Richmond
 Dr. M. S. Fitchett, Norfolk
 Dr. E. Latane Flanagan, Richmond
 Dr. Fred P. Fletcher, Richmond
 Dr. J. C. Forbes, Richmond
 Dr. K. S. Freeman, Kenbridge
 Dr. G. S. Fultz, Butterworth
 Dr. Louise Galvin, Richmond
 Dr. Emily Gardner, Richmond
 Dr. H. T. Garriss, Richmond
 Dr. Thomas F. Gill, Richmond
 Dr. W. Wallace Gill, Richmond
 Dr. James H. Gordon, Covington
 Dr. E. G. Grantham, Richmond
 Dr. B. H. Gray, Richmond
 Dr. David B. Gregg, Richmond
 Dr. Ruth Mason Grigg, Petersburg
 Dr. St. George Grinnan, Richmond
 Dr. M. Grove-Hagen, Richmond
 Dr. H. B. Haag, Richmond
 Dr. J. M. Habel, Jetersville
 Dr. J. M. Habel, Jr., Richmond
 Dr. E. C. Harper, Richmond
 Dr. C. L. Harrell, Norfolk
 Dr. Percy Harris, Scottsville
 Dr. Alexis F. Hartmann, St. Louis, Mo.
 Dr. H. T. Hawkins, Waynesboro
 Dr. J. E. Haynesworth, Buckingham
 Dr. W. H. Higgins, Richmond
 Dr. Randolph Hoge, Richmond
 Dr. Guy W. Horsley, Richmond
 Dr. J. Shelton Horsley, Richmond
 Dr. Frank L. Hughes, Ashland
 Dr. John Hundley, Jr., Lynchburg
 Dr. J. Morrison Hutcheson, Richmond
 Dr. E. H. Ingersoll, Richmond
 Dr. E. C. Jamison, Rocky Mount
 Dr. A. M. Jenkins, Richmond
 Dr. F. S. Johns, Richmond
 Dr. Mary E. Johnston, Tazewell
 Dr. Basil Jones, Richmond
 Dr. J. Bolling Jones, Petersburg

Dr. C. T. Jones, Petersburg
 Dr. T. D. Jones, Richmond
 Dr. H. E. Jordan, University
 Dr. Wm. R. Jordon, Richmond
 Dr. E. C. Joyner, Suffolk
 Dr. L. Karp, Richmond
 Dr. Charles Kendrick, Richmond
 Dr. J. D. Kernodle, Richmond
 Dr. Paul Kimmelstiel, Richmond
 Dr. D. M. Kipps, Front Royal
 Dr. Fred G. Kroncke, Richmond
 Dr. Edward J. Lefeber, Richmond
 Dr. A. S. Lilly, Richmond
 Dr. P. D. Lipscomb, Richmond
 Dr. Louis Lovenstein, Richmond
 Dr. John P. Lynch, Richmond
 Dr. R. G. McAllister, Richmond
 Dr. J. A. McCullough, Richmond
 Dr. E. P. McGavock, Richmond
 Dr. W. Ambrose McGee, Richmond
 Dr. Hunter McGuire, Richmond
 Dr. R. J. Main, Richmond
 Dr. F. B. Mandeville, Richmond
 Dr. D. Meade Mann, Richmond
 Dr. E. R. Martin, Newport News.
 Dr. H. Page Mauck, Richmond
 Dr. T. Stanley Meade, Richmond
 Dr. W. A. Murphy, Staunton
 Dr. Sidney Negus, Richmond
 Dr. Charles Nelson, Richmond
 Dr. Kinloch Nelson, Richmond
 Dr. R. A. Nichols, Jr., Richmond
 Dr. Margaret Nolting, Richmond
 Dr. Charles L. Outland, Richmond
 Dr. Wm. H. Parker, Richmond
 Dr. Marshall J. Payne, Staunton
 Dr. W. R. Payne, Newport News
 Dr. O. H. Perry Pepper, Philadelphia, Pa.
 Dr. Harrison Picot, Richmond
 Dr. C. I. Pirkle, Petersburg
 Dr. Cullen Pitt, Richmond
 Dr. E. E. Pittman, Oak City, N. C.
 Dr. Wm. B. Porter, Richmond
 Dr. R. S. Preston, Richmond
 Dr. Wm. R. Pretlow, Warrenton

Dr. C. W. Pritchett, Danville
 Dr. C. W. Putney, Staunton
 Dr. M. B. Raiford, Franklin
 Dr. O. L. Ramsey, Gretna
 Dr. E. A. Ratcliffe, Richmond
 Dr. B. W. Rawles, Sr., Richmond
 Dr. B. W. Rawles, Jr., Richmond
 Dr. J. G. Rennie, Richmond
 Dr. A. F. Robertson, Staunton
 Dr. W. M. Robinson, Richmond
 Dr. R. O. Rogers, Bluefield, W. Va.
 Dr. S. C. Rogers, Milwaukee, Wis.
 Dr. Mason Romaine, Petersburg
 Dr. Nathan Rosenthal, New York, N.Y.
 Dr. D. M. Royal, Salem, N. C.
 Dr. M. P. Rucker, Richmond
 Dr. H. B. Sanford, Richmond
 Dr. J. W. Sayre, Newport News
 Dr. J. H. Scherer, Richmond
 Dr. C. I. Sease, Richmond
 Dr. J. A. Shield, Richmond

Dr. H. B. Showalter, Kenbridge
 Dr. R. F. Simms, Richmond
 Dr. James H. Smith, Richmond
 Dr. H. M. Snead, Petersburg
 Dr. W. P. Starling, Roseboro, N. C.
 Dr. H. U. Stephenson, Richmond
 Dr. Henry S. Stern, Richmond
 Dr. M. S. Stinnett, Buchanan
 Dr. Harvey B. Stone, Baltimore, Md.
 Dr. L. T. Stoneburner, Richmond
 Dr. A. R. Stork, Richmond
 Dr. Arnold Strauss, Norfolk
 Dr. Lee E. Sutton, Richmond
 Dr. R. V. Terrell, Richmond
 Dr. J. W. Thomas, Richmond
 Dr. G. V. Thompson, Chatham
 Dr. P. L. Thompson, Grand Rapids, Mich.
 Dr. W. D. Tillson, Richmond
 Dr. J. M. Tompkins, Richmond
 Dr. Elam C. Toone, Richmond

Dr. C. C. Trice, Richmond
 Dr. G. Van Huysen, Richmond
 Dr. Harry Walker, Richmond
 Dr. Fred J. Wampler, Richmond
 Dr. H. H. Ware, Richmond
 Dr. Samuel Warshuer, Richmond
 Dr. T. M. Watson, Greenville, N. C.
 Dr. J. H. Weatherby, Richmond
 Dr. John G. Welch, Richmond
 Dr. H. F. White, Fishersville
 Dr. L. J. Whitehead, Richmond
 Dr. Claiborne Willcox, Norfolk
 Dr. J. W. Wilkins, Mt. Olive, N. C.
 Dr. J. N. Williams, Richmond
 Dr. Carrington Williams, Richmond
 Dr. E. S. Williams, Richmond
 Dr. F. D. Wilson, Norfolk
 Dr. N. G. Wilson, Norfolk
 Dr. F. J. Wright, Petersburg
 Dr. Robert H. Wright, Phoebus
 Dr. M. R. Yates, Petersburg

Obstetrics and Gynecology.

During April Dr. L. L. Shamburger conducted a postgraduate course in Obstetrics and Gynecology in Orange, Albemarle, and Augusta counties, holding classes at Orange, Charlottesville and Waynesboro.

On May 16, a course was begun in additional counties in the Valley of Virginia. Meetings are scheduled at Staunton, Harrisonburg, Luray, Woodstock, and Front Royal.

Pediatrics.

Dr. Robert B. Hightower completed a postgraduate course in Pediatrics in the Mid-Tidewater section on April 23. Meetings were held at Bowling Green, Tappahannock, Gloucester, and West Point. Since that time Dr. Hightower has been engaged on a circuit on the Peninsula of Virginia, holding meetings at Williamsburg, Hampton, Newport News, and for the colored doctors at Norfolk.

Internal Medicine.

The first short course in internal medicine was held by the Department of Clinical and Medical Education on the Eastern Shore of Virginia on May

10-11 and 19-20. Meetings were held at Nasawadox and Accomac Court House. Dr. T. Neill Barnett and Dr. William B. Porter of the Medical College of Virginia were the instructors. The following topics were discussed at the request of the Eastern Shore Societies.

1. Etiology and Treatment of Peptic Ulcer.....Dr. Barnett
2. Remarks on Diseases of the Colon.....Dr. Barnett
3. HyperinsulinismDr. Barnett

1. The Classification of Heart Disease with Special Reference to "Focal Infection".....Dr. Porter
2. The Pathogenesis of Renal Insufficiency----Dr. Porter

During the month of July a similar course is planned for the Southwestern Virginia doctors. Members of the University of Virginia Medical School faculty will act as instructors. A more detailed report of these courses will be made at a later date. In the meantime, local societies wishing to have a similar course offered should communicate with the Executive Secretary, Box 1487, University Station, Charlottesville, Virginia.

GEORGE B. ZEHMER,
Executive Secretary.

Proceedings of Societies

Alleghany-Bath Medical Society.

This Society held its annual meeting at Hot Springs on April 28th, at which time the following

officers were elected for the ensuing year: President, Dr. Robert A. Warren of Hot Springs; vice-president, Dr. Louis A. Houff of Clifton Forge; and

the secretary-treasurer, Dr. Robert P. Hawkins of Clifton Forge was re-elected.

The Amelia County Medical Society,

A unit of the Fourth District Medical Society, held a regular meeting at Amelia C. H., on May 4, and elected new officers and also delegate and alternate for the State meeting in Danville. The new officers are: President, Dr. H. Cowles Rucker, Mattoax; vice-president, Dr. J. M. Habel, Jetersville; and secretary-treasurer, Dr. J. L. Hamner (re-elected), Mannboro.

Arlington County Receives Award.

In the Fourth Annual Rural Health Conservation Contest, conducted by the American Public Health Association, Arlington County, Virginia, was among those granted an award of merit for the Eastern Division.

The Augusta County Medical Association

Held its regular quarterly meeting in Staunton, on May 4. Papers were presented by Dr. George B. Lawson, Roanoke, on "Sulfanilamide in the Treatment of Pneumonia" and Dr. Charles W. Putney, Staunton, on "Sirenonian Monster".

In response to a request for the endorsement of a movement to make birth control a part of the State's public health program, Drs. Alexander F. Robertson, Staunton, and J. F. Hubbard, Waynesboro, were appointed a committee to investigate the request and make recommendations at a future meeting.

Dr. William A. Murphy and Dr. L. S. Booker, both of Staunton, are president and secretary, respectively, of this Association.

The next session will be held in Waynesboro, August 3.

The Clinch Valley Medical Society

Held its regular meeting in Norton, on April 30, with the president, Dr. R. L. Phipps, presiding. There was a very large attendance, and the following program was presented: "Immunizations in Children" by Dr. Robert B. Hightower of the Department of Clinical and Medical Education; "Various Types of Heart Disease: Their Management in Regard to Industry and Compensation" by Dr. Paul D. Camp, Richmond; and "The Laborer with Diabetes" by Dr. William R. Jordan, Richmond.

Lynchburg Academy of Medicine.

The regular meeting of the Academy was held in the Elk's Club, May 2, with Dr. Clyde Adkerson

presiding. At this time, a native son of Lynchburg, Dr. C. P. M. Sheffey, a medical missionary in the Belgian Congo, gave a very interesting talk on "Practice of Medicine in Africa," stressing especially the tropical diseases.

C. E. KEEFER,
Secretary.

The Mid-Tidewater Medical Society

Met at Saluda on April 26, with Dr. Clarence Campbell of Sparta, president, presiding, and Dr. M. H. Harris secretary. At the morning session routine business was attended to and Dr. N. G. Nelms of Mathews was accepted as a member. The Society heard case reports from Dr. John R. Parker of Providence Forge on "Five Cases of Anthrax", and from Dr. Hawes Campbell of Enfield on "Hypotension". The members and guest were then entertained at lunch at Bristow Hotel by the local doctors.

At the afternoon session, papers were presented by the following guest speakers from Richmond: Dr. P. D. Camp on "Heart Irregularities", discussed by Dr. J. M. Hutcheson; Dr. D. G. Chapman on "Hypertension"; Dr. F. S. Johns on "Cancer of the Body of the Uterus"; and Dr. Chas. R. Robins, Sr., who spoke on a "New Operation for Inguinal Hernia" which was discussed by Dr. Guy Horsley.

In addition, the following members and guest were in attendance: Drs. R. D. Bates, Sr., R. D. Bates, Jr., Hawes Campbell, Jr., W. S. Cox, M. H. Harris, H. A. Tabb, Jas. W. Smith, W. P. Jones, V. R. Steiff, W. W. Rixey, S. E. Berger, O. T. Amory, W. O. Poindexter, and H. F. Hoskins.

Richmond Academy of Medicine.

Dr. J. C. Pennington, urologist of Nashville, Tenn., was the guest speaker at the meeting of the Academy on May 10, his subject being "The Management of Stones in the Upper Urinary Tract".

The only local speaker was Dr. J. Morrison Hutcheson who read a paper on "The Cardiac Complications of Funnel Breast".

The last meeting of the Academy until the Fall was held on May 24, at which time Dr. Karl S. Blackwell presented a paper on "Headache—Common Causes and Practical Applications", and Dr. J. H. Scherer read a paper entitled "The Blood Smear in Differential Diagnosis". Mr. Andrew D. Christian, local attorney, gave a talk on "The Doctor and the Law". The usual buffet suppers followed both meetings.

Roanoke Academy of Medicine.

The May meeting of the Academy was held on the 2nd at the Veterans Facility, Roanoke, at which time delegates and alternates for the Danville meeting of the State Society were elected, and the following were elected as officers for the year beginning October: President, Dr. L. G. Richards; vice-president, Dr. Charles A. Young; and secretary-treasurer, Dr. A. C. Davis. All are of Roanoke. The scientific program following the business session was presented by Drs. Paul Weitz, P. M. Jerrell, J. T. McKinney, F. C. Robbins, and W. J. Heffner, members of the Veterans Facility.

The Southwestern Virginia Medical Society

Held its annual spring meeting in Abingdon, April 14, under the presidency of Dr. P. S. Smith, Abingdon. The scientific session was attended by sixty-five members, and the following papers were presented: Diverticulitis of the Cecum by Dr. J. Stuart Staley, Marion; The Prevention of Deafness in the School Child by Dr. Harry B. Stone, Jr., Roanoke; Hysteria by Dr. Thomas N. Spessard, Roanoke; The Management of Trichomonas Infection in the Female by Dr. R. H. Grubbs, Christiansburg; Important Points to be Remembered about Crossed Eyes by Dr. John A. Pilcher, Jr., Roanoke; Psychiatric Aspects of Physical Disease by Dr.

Joseph R. Blalock, Marion; and Hemiplegia Complicating Labor by Dr. Mike Hines, Abingdon.

The evening session was opened by a banquet with seventy-five members present, Guest speakers were Drs. Henry B. Mulholland and Robert V. Funsten, of the University of Virginia, whose subjects were "Newer Therapeutic Agents: Sulfanilamide, Prothamine Insulin and Pneumococci Serum" and "Fractures", respectively.

Twelve new members were elected as follows: Drs. G. R. Carpenter, Bristol; C. W. Hickam, Pulaski; T. L. Gemmill, Radford; A. L. Jones, Chilhowie; V. J. Cox, Galax; Joseph R. Blalock, Marion; K. J. Moore, Bastian; H. L. Dean, Radford; Geo. W. McCall, Bristol; S. W. Huddle, Rural Retreat; R. O. Smith, Pulaski; and H. B. Stone, Jr., Roanoke. Dr. I. E. Huff, Roanoke, was elected to honorary membership.

The next meeting of the Society is scheduled for September.

Dr. James P. King, Radford, is secretary-treasurer.

South Piedmont Medical Society.

At the semi-annual meeting of this Society, held in Danville, in April, Dr. Coleman D. Bennett, of Chatham, was elected president. He succeeds Dr. A. P. Bohannon, of Virgilina.

News Notes

Danville Meeting of State Society.

The Program Committee of the State Society, in making plans for our sixty-ninth annual session in Danville, October 4-6, decided to continue the Round Table discussions this year in place of the symposia, as they proved so popular at our last meeting. The subjects were selected with a view to being of special interest to the general practitioner, but the various special societies were invited to arrange for Round Table discussions and several have already signified their intention of doing this.

Dr. G. F. Simpson, President, has announced that Dr. Frederick A. Willius, Rochester, Minn., and Dr. William J. Mallory, Washington, D. C., will be his special guests for this meeting.

Early in May, cards were sent all members, requesting that those who wish to present papers at

the Danville meeting send titles with abstracts to the Society's office, 1200 East Clay Street, Richmond. Please bear in mind that *July 1 is the dead line* for receiving these titles.

Again, we advise that hotel reservations should be made promptly, especially by members who wish to be at headquarters hotel.

American Medical Association.

The annual meeting of the Association in San Francisco is very near at hand, June 13 to 17 inclusive, and elaborate preparations have been made for this occasion. Several special trips have been arranged for the comfort and pleasure of those who can attend, one of especial interest being that under the auspices of the American Express Travel Service, with district office for Virginia being in the Willard Hotel Building at 1414 F Street, Northwest, Wash-

ington, D. C. A number of doctors from this section are planning to attend, including the three delegates from the Medical Society of Virginia, Dr. Wright Clarkson, Dr. Walter B. Martin, and Dr. J. C. Flippin. In addition to the splendid scientific programs always arranged for these meetings, this is a wonderful opportunity for fellows of the A. M. A. to see this lovely city and other places on the Pacific coast at their best.

Golf Tournament.

The twenty-fourth tournament of the American Medical Golfing Association will be played at the San Francisco Golf and Country Club, on June 13. Active fellows of the AMGA may compete for fifty beautiful trophies and prizes—for experts, dubs, beginners—in nine events, both gross and net. The cost of \$7.00 includes greens fee, tournament fee, refreshments, exceptional entertainment, prizes, and the annual banquet—with “positively no speeches”. New fellows pay an additional enrollment fee of \$3.00. Bring your official handicap certified by your home club secretary. Any other information may be obtained from Bill Burns, Executive Secretary, Lansing, Michigan.

New Hospital in Southwestern Virginia.

Dr. George W. Botts has opened a new Eye, Ear, Nose and Throat Hospital at Norton—the only hospital of its kind in the extreme southwestern section of Virginia or eastern Kentucky. It has thirty-six rooms with twenty-one beds and is strictly modern in every respect. In addition to private rooms, there are three wards and also a suite for the treatment of colored patients.

The Virginia Pediatric Society

Held its annual clinical meeting on May 12, at Chamberlin Hotel, Old Point Comfort, with Dr. W. A. McGee of Richmond, president, presiding. Dr. J. M. Bishop of Roanoke is secretary. There were twenty-five members and ten guests present, in addition to a delegation of nurses from Norfolk. Several interesting papers were read and discussed at the morning session, which was followed by a luncheon. Golf and fishing engaged the attention of the doctors in the afternoon and, at this time, Dr. Basil Jones of Richmond proved to be the “real fisherman” of the seven indulging in this sport.

The next meeting of this Society will be a luncheon and business session in Danville at the time of the State Society meeting, in October.

State Board of Medical Examiners Appointed.

In accordance with nominations made by the Medical Society of Virginia, Governor Price has just re-appointed the following as members of the Medical Examining Board of Virginia for a term of four years: Dr. R. D. Bates, Newtown; Dr. P. St. L. Moncure, Norfolk; Dr. H. U. Stephenson, Toano and Richmond; Dr. I. C. Harrison, Danville; Dr. J. W. Preston, Roanoke; Dr. P. W. Boyd, Winchester; Dr. Lewis Holladay, Orange; and Dr. F. H. Smith, Abingdon. The Fourth District member, to fill the vacancy caused by the death of Dr. F. J. Wright, will be appointed later.

Dr. E. H. Shackelford, Richmond, was appointed the osteopathic member of the Board and Dr. G. W. Johnson, Danville, the homeopathic.

The Mental Hygiene Society of Virginia

Held its annual meeting in Richmond, May 10, under the presidency of Dr. Beverley R. Tucker. Dr. Winfred Overholser, superintendent of St. Elizabeth's Hospital, Washington, D. C., was the guest speaker.

Dr. Howard Masters, Richmond, was elected president, and the following doctors were elected to three year terms as directors: Dr. J. Morrison Hutcheson, Dr. Austin I. Dodson, Dr. Basil B. Jones, Dr. Manfred Call, III, all of Richmond, Dr. James King, Radford, and Dr. T. N. Spessard, Roanoke.

Dr. White Ninety Years Young.

Dr. Joseph A. White of Richmond in April was receiving congratulations of friends on the celebration of his ninetieth birthday. Though he retired from practice a couple of years ago, Dr. White is still alert and keenly interested in medical affairs. He is the oldest living member of the Medical Society of Virginia in point of continuous membership, having joined in 1880, and has been the recipient of many honors from this and other organizations.

Medical College of Virginia Organizes New Alumni Chapters.

During the Centennial Year of the College, it is planned to organize as many new alumni chapters as possible. The following have been started recently:

The Petersburg Alumni, with Dr. Meade Edmunds as president;

The Lynchburg Alumni, with Dr. James R. Gorman as president; and

The Roanoke Alumni, with Dr. John O. Boyd president.

Other active chapters of the alumni are in Norfolk, the Peninsula Chapter in Newport News and vicinity, New York City and West Virginia.

Centennial Exhibit at Medical College of Virginia.

The final showing of the Medical College of Virginia Centennial Exhibit will be open to the public from June 1 to 10 inclusive. For the benefit of those who find it impossible to visit the exhibit during the day, it will also be open from 7:00 to 9:00 P.M. on June 6 to 10 inclusive. Several new exhibits will be on display.

Dr. and Mrs. Charles P. M. Sheffey

And two children who have spent the past year in the United States expect to sail on June 25, on the *S. S. Pennland* from New York to Antwerp. Their final destination is the Belgian Congo where Dr. Sheffey has been engaged for several years in mission work at Lusambo.

Dr. Thomas Wheeldon,

Richmond, recently delivered the orthopaedic lecture to the National Convention of the American Association of Health and Physical Education in Atlanta, his subject being The Relationship of Physiotherapy to Physical Education.

Medical Society of the State of North Carolina.

One of the best meetings in the history of this Society was held early in May under the presidency of Dr. Wingate Johnson of Winston-Salem. At this time Dr. James Sidbury of Wilmington succeeded to the presidency and Dr. William Allan of Charlotte was named president-elect. Dr. Thomas M. W. Long of Roanoke Rapids was re-elected secretary.

Dr. and Mrs. Wm. Lett Harris,

Of Norfolk, will spend the months of July and August at Courtney Terrace, Virginia Beach.

Dr. R. S. Griffith,

Waynesboro, was the recipient of congratulations, the middle of April, upon the celebration of another birthday. He did not give out his exact age but it is known that he has been a practicing physician continuously for fifty-four years, forty-seven of which have been spent in Basic City, later incorporated with Waynesboro. Dr. Griffith has held many positions of honor in his city and has for a number of years

been a physician for the Norfolk and Western and Chesapeake and Ohio Railways. He is also a high ranking Mason.

Dr. C. E. Holderby,

For several years on the staff of the Eastern State Hospital, located in Williamsburg on May 15, where he is engaged in private practice.

News From Local Health Districts.

Dr. R. G. Beachley, formerly Deputy Director of Rural Health in the Southwest Health District, has assumed his duties as Health Officer in Arlington County. He succeeded Dr. Earle G. Brown, who resigned to accept a position in New York State.

Announcement has been made that the Board of Supervisors of Buchanan County recently voted the establishment of a full-time health department. Since April 1, 1936, Buchanan County's health activities were conducted as part of a district composed of Tazewell, Russell and Buchanan Counties. County health headquarters will be established in Grundy. The new health department will begin operating July 1, 1938.

News Notes from Medical College of Virginia.

The Centennial Session of the Medical College of Virginia will close June 4.

On Monday, June 5, the Commencement Sermon will be given by the Right Reverend Beverley D. Tucker at Saint Paul's Church at 8:00 P. M. Alumni Day will be observed on Monday, June 6. On Tuesday, June 7, at 10:30 A. M. the Centennial Program will be held at Saint Paul's Church. Dr. Harvey A. Christian, Hersey Professor of the Theory and Practice of Physic, Harvard Medical School, will be the chief speaker. Delegates are expected from many colleges and universities throughout the country. Greetings will be extended by Governor Price, Mayor Bright, Dr. Forest R. Moulton of the American Association for the Advancement of Science, and many others. Many alumni are expected for the Centennial celebration.

On Tuesday, June 7, at 8:00 P. M. at the Mosque the Commencement exercises will be held. Diplomas will be awarded to seventy-six graduates in medicine, sixteen graduates in dentistry, twenty-one bachelor's of science in pharmacy, and twenty-seven graduates in nursing, a total of 140 graduates. Twenty-one graduates in medicine will receive commissions as first lieutenants in the Reserve Corps,

Medical, of the United States Army, and nine graduates in dentistry will receive commissions as first lieutenants in the Reserve Corps, Dental Unit. The Commencement address will be given by President J. Rion McKissick of the University of South Carolina.

The American Association of Bacteriologists and Pathologists has accepted the invitation of the College to hold its annual meeting in Richmond next year. This will probably be held April 6 and 7, 1939.

The new \$313,000.00 dormitory is expected to be ready for occupancy July 1. The new building will house the residents, internes, et cetera, of the hospital division and the senior medical class. The building is designed to house 147 occupants, with cafeteria, auditorium, reading room, and other ultra-modern facilities for their comfort and convenience.

Miss Frances Helen Zeigler, professor of nursing, and Miss Lulu K. Wolf, associate professor of nursing, recently attended the annual meeting of the American Nurses' Association in Kansas City, Missouri.

News from University of Virginia.

On April 19 a portrait of Dean James Carroll Flippin was presented to the Medical School. Brief exercises were held in the auditorium of Madison Hall. The portrait was formally presented by Mr. James B. Black, President of the Senior Medical Class, unveiled by Dr. Flippin's grand-daughter, Miss Carroll Norrall of New York City, and accepted by the President of the University, Dr. John Lloyd Newcomb. It is the gift of the medical alumni since Dr. Flippin became Dean in 1924 and the graduating class for 1938. The portrait was done by Mr. Alpheus P. Cole of New York City.

On April 22 Dr. E. P. Lehman spoke before the Rockingham County Medical Society in Harrisonburg on the subject of Surgical Shock, and Dr. J. Edwin Wood spoke on the subject of The Effect of Tobacco on the Cardio-Vascular System.

On May 2 Dr. E. P. Lehman presented a paper before the American Surgical Association during the meeting of the Congress of Physicians and Surgeons in Atlantic City on The Treatment of Intraperitoneal Abscess form Appendicitis. The same paper was presented at the Twenty-Fifth Anniversary Celebration of Peter Bent Brigham Hospital in Boston on May 5.

The Twenty-First Postgraduate Clinic was held at the University of Virginia Medical School on April 29. Dr. Emil Novak, of the Johns Hopkins Hospital, spoke on Gynecological Endocrinology and Organo-therapy. The program included, in addition, the following papers by members of the University Faculty: The Thyroid by Dr. E. P. Lehman; The Pancreas by Dr. H. B. Mulholland; Chemical Advances in Endocrinology by Dr. Alfred Chanutin; The Adrenals by Dr. Edward Corey, and The Pituitary by Dr. J. M. Meredith. Eighty physicians were registered for this Clinic.

On April 29 Dr. H. E. Jordan took part in the symposium of the Centennial year of the Medical College of Virginia. He spoke on the subject of Blood Formation in Birds, With Special Reference to the Evidence for a Genetic Relation Between Lymphocytes and Erythrocytes.

Dr. C. H. Lenhart, Professor of Surgery at Western Reserve University, visited the Medical School on May 2.

The following members of the Medical Faculty appeared on the program at the meeting of the Virginia Academy of Science in Blacksburg on May 6 and 7: Dr. H. E. Jordan Spoke on Evaluation of the Evidence for the Conversion of Smooth into Striated Muscle; Dr. C. C. Speidel gave a moving picture demonstration on The Transformation of Cross-Striated Substance into Retraction Clots in Skeletal and Cardiac Muscle Fibers; Dr. E. L. Corey spoke on Effect of Cortico-adrenal Extract Administration Following Hypophysectomy in the Rat; and Dr. S. G. Bedell spoke on Observations on the Lateral-Line Organs of Living Amphibian Larvae With Special Reference to Orange Colored Granules of the Sensory Cells. The following Research Fellows also appeared on the program: Dr. H. P. Newbill spoke on The Production of Ependymogenous Macrophages in the Human Following Intraventricular Injection of Colloidal Thorium Dioxide, and Dr. E. DeWitt Miller spoke on Cell Changes in Bone Marrow of Adrenalectomized Cats.

At the meeting of the University of Virginia Medical Society on May 6, Dr. Robert S. Palmer, of the Massachusetts General Hospital, spoke on the subject of Rationale and Results of the Surgical Treatment of Essential Hypertension.

News Notes from Duke University.

On April 18 and 19, Miss Mary J. Dunn, of the

United States Public Health Service, conducted a clinic at Duke Hospital for public health nurses of Durham and nearby counties.

On April 19, Dr. G. H. Whipple, Dean of the School of Medicine and Dentistry, Rochester University, spoke at the meeting of the Duke Chapter of Sigma Pi, his subject being, Hemoglobin, Plasma Protein and Tissue Proteins: Their Production and Interrelation in the Body.

On April 26, Miss Elizabeth P. Rice, Director of Medical Social Service, New Haven Hospital, spoke to the medical students on The Need for Medical Social Service.

Dr. John A. Wolfe,

Recently on the staff of the Southwestern State Hospital at Marion, has located at Abingdon where he is engaged in general practice.

Dr. Edwin L. Kendig, Jr.,

Class of '36, University of Virginia School of Medicine, recently on the staff of the Babies' Hospital at Wrightsville Sound, Wilmington, N. C., is now interning at Johns Hopkins Hospital, Baltimore, on the Pediatric Service. On July 1, he will go to Bellevue Hospital, New York City, as assistant resident on Pediatrics.

Dr. H. H. Hines,

Recently of Pardee, is locating in Richmond on June 1, where he will be associated with Dr. Marvin E. Nuckols at 1614 Monument Avenue, in general practice.

Dr. F. A. Snidow,

Formerly of Iowa City, Iowa, has moved to El Paso, Texas., where he is associated with the El Paso Medical and Surgical Clinic. His practice will be limited to obstetrics and gynecology. Dr. Snidow graduated in medicine from the University of Virginia in 1932.

The West Virginia State Medical Association

Is to hold its annual meeting at White Sulphur Springs, July 11-13, under the presidency of Dr. Charles W. Waddell of Fairmont. There will be two special orations by members—one on a medical and one on a surgical subject—and addresses by several out-of-state guests.

Civil Service Examination for Medical Technician.

The U. S. Civil Service Commission announces open competitive examination on June 13, for medical technician (field roentgenology). The necessary forms may be obtained from the Secretary, Board of U. S. Civil Service Examiners, at any first class post office, or from the Commission at Washington, D. C., stating title of examination desired.

New Members on State Advisory Board on Mental Hygiene.

Governor Price has announced the following new appointments to the Advisory Board on Mental Hygiene: Dr. J. S. DeJarnette, superintendent of the Western State Hospital, Staunton; Dr. Joseph Blacklock, superintendent of the Southwestern State Hospital, Marion; and Dr. O. B. Darden, Westbrook Sanatorium, Richmond. Members reappointed are: Dr. Hugh Henry, Petersburg; Dr. George Brown, Williamsburg; Dr. Harvey DeJ. Coghill; Dr. Finley Gayle; Dr. Howard Masters, and Dr. James Asa Shield, the last four being from Richmond.

Graduate Course in Electrocardiography.

An intensive two weeks' course in Electrocardiography, for graduate physicians, will be given at the Michael Reese Hospital, Chicago, August 22-September 3. The course is open to both the beginning and advanced student and the class will be limited in number.

Full information may be obtained from The Medical Librarian, Michael Reese Hospital, 29th and Ellis Ave., Chicago, Ill.

Virginia Academy of Science.

At the annual meeting of the Academy, held at the Virginia Polytechnic Institute in Blacksburg, May 6 and 7, Colonel Earle B. Norris, dean of engineering at the Institute, was elected president, and Dr. E. C. L. Miller, Richmond, continues as secretary-treasurer. Dr. Walter B. Martin, Norfolk, was named chairman of the medical section.

Dr. J. Newton Dunn,

Blackstone, was recently appointed a member of the executive committee of the Chamber of Commerce of that city.

Dr. David C. Wilson,

Charlottesville, was recently elected as vice-president of the local Rotary Club.

Former Internes of Medical College of Virginia Hold Reunion.

Approximately 200 physicians, who are former internes of the Medical College of Virginia, held their third annual meeting at the College, April 27, under the presidency of Dr. John S. Weitzel, of Richmond.

The morning program consisted of papers by Dr. J. M. Meredith, University of Virginia; Dr. H. C. Spalding and Dr. W. P. Barnes, both of Richmond. After a luncheon, clinical pathological conferences were conducted by Drs. Louise Galvin, Harry Walker, and Randolph Hoge, all of the Medical College of Virginia. Following this a smoker was held and the meeting was closed with a banquet and dance.

Officers elected are Dr. Harry Walker, president; Dr. W. P. Barnes, vice-president; and Dr. Nathan Bloom, secretary-treasurer. All are from Richmond.

Married.

Dr. George Winslow Simpson of Norfolk and Miss Virginia Frances Martin of South Norfolk, April 7.

Dr. M. M. Pinckney,

Richmond, was at a recent meeting re-elected one of the vice-chairmen of the local chapter of the American Red Cross.

Dr. J. Randolph Tucker,

Williamsburg, automatically succeeded to the presidency of the Rotary Club of that place at its meeting on April 20.

Medical Director, Life Insurance Company of Virginia.

Dr. Ennion S. Williams, who has been acting medical director of the Life Insurance Company of Virginia since the death of Dr. Charles L. Rudasill last winter, has just been elected to the position of medical director for that company.

International Goiter Conference.

The American Association for the study of Goiter announces that the Third International Goiter Conference is to convene in Washington, D. C., September 12 to 14, 1938. Physicians and others in the United States and other countries desirous of participating in the program are requested to submit titles at their earliest convenience. The general subjects proposed for discussion are: endemic goiter, cretinism, and myxedema; the thyroid in relation to

metabolism, nutrition and endocrine glands—physiological and pathological interrelationship and clinical application; and hyperthyroidism.

The official language of the Conference shall be English but interpreters will be furnished for papers read in other languages.

Further information may be obtained from any officer of the American Association, or Dr. Allen Graham, chairman of the Program Committee, 2020 East 93rd Street, Cleveland, Ohio. Dr. W. Blair Mosser, Kane, Pa., is corresponding secretary.

The Virginia Section, American College of Physicians,

Held its meeting in Charlottesville on May 18, with an attendance of thirty-three members. The program included papers by Drs. Carl Speidel, Staige D. Blackford, H. B. Mulholland, J. Edwin Wood, Jr., and Andrew D. Hart, all of the University of Virginia. Dr. J. W. Preston, Roanoke, was elected president for the coming year and Dr. George B. Lawson, also of Roanoke, was re-elected secretary.

The New York Academy of Medicine

Will Hold its Eleventh Annual Graduate Fortnight from October 24 to November 4. The subject is "Diseases of the Blood and Blood-Forming Organs", and twenty-three hospitals have accepted the invitation to participate by having prepared afternoon clinics and clinical demonstrations. There will also be addresses by recognized authorities in their special fields, drawn from leading medical centers of the United States.

The New York Academy of Medicine provides this program for the fundamental purpose of medical education. Consequently all members of the medical profession are eligible for registration and are invited to attend. A complete program and registration blank may be obtained from Dr. Mahlon Ashford, 2 East 103rd St., New York City.

Mr. Zehmer Receives Appointment.

Dr. John Lloyd Newcomb, president of the University of Virginia, has announced the appointment of Mr. George Baskerville Zehmer as acting dean of the summer quarter, succeeding the late Charles G. Maphis. Mr. Zehmer is professor of education and director of the extension division of the University, and has most efficiently served the Department of Clinical and Medical Education of the Medical Society of Virginia as its executive secretary since its organization.

American Public Health Association.

The 67th Annual Meeting of this Association is to be held in Kansas City, Missouri, October 25-28, at which time an attendance of 3,000 is expected. "Public Health in the World of Tomorrow" is the central theme of this meeting, and this will be emphasized throughout the program.

Wanted—

Laboratory Technician for small hospital in city of eastern part of Virginia. Address replies to "XYZ", care VIRGINIA MEDICAL MONTHLY, 1200 East Clay Street, Richmond. (*Adv.*)

Medical Research.

Physician having access to a complete Medical Library offers his services to authors or others in locating references, or for medical research of any kind. Reasonable fee. Address "No. 38", care this journal. (*Adv.*)

Home for Convalescences.

A home for the care and treatment of chronic aged and convalescences has been opened at Arrington, Nelson County, Virginia, under the care of Dr. and Mrs. Fred M. Horsley. Information upon request. (*Adv.*)

Obituary Record

Dr. Fletcher Johnston Wright,

Prominent Southside physician, died at his home in Petersburg, May 8, following a brief illness. He was a native of Fluvanna County and sixty-five years of age. Dr. Wright graduated from the former University College of Medicine, Richmond, in 1898, and was a former president of the alumni of the College. He was a member of the State Board of Medical Examiners, representing the Fourth District. Dr. Wright had been a member of the Medical Society of Virginia since 1899 and had served on numerous committees, being chairman of the Advisory Board to the Woman's Auxiliary at the time of his death. He was a member of the American College of Physicians, a member of the executive board of the Virginia Tuberculosis Association, a Mason, and an honorary member of the Petersburg Kiwanis Club. Dr. Wright is survived by his wife, a former president of the State Medical Auxiliary, and two sons, one of them Dr. Fletcher J. Wright, Jr., of Petersburg.

Dr. Samuel Thomas Anderson Kent,

Well-known physician of Halifax County, died at his home in Ingram on May 23, having been in ill health for some time. He was seventy-nine years of age and the oldest physician in Halifax County, both in age and point of service, as he had practiced there continuously for fifty-three years. Dr. Kent graduated from the College of Physicians and Surgeons, Baltimore, in 1882. He was formerly a member of the Virginia House of Delegates and the Halifax County board of supervisors, and was president of the County Telephone Company. Dr. Kent had been a member of the Medical Society of Virginia for fifty-five years. His wife and five children survive him.

Dr. St. Julien Oppenheimer,

Widely known and beloved Richmond physician died May 1, after a brief illness. He was seventy-two years of age and a graduate of the Medical College of Virginia in 1893. He had practiced in Richmond since his graduation. Dr. Oppenheimer was for some years local surgeon for the Chesapeake and Ohio Railway Clinic and was a former surgeon of the Richmond Police Department. He had been a member of the Medical Society of Virginia for forty-five years. Besides his wife and six children, Dr. Oppenheimer is survived by a sister and three brothers, one of whom is Dr. William T. Oppenheimer, also of Richmond.

Dr. Lazarus Karp,

Richmond, died suddenly May 23. He was a native of Latvia and was fifty-one years of age. Dr. Karp graduated from the Medical College of Virginia in 1909 and was for some years associate professor of physiology, anatomy and the practice of medicine at the College. He was an active leader in Jewish group activities, having founded and become the first president of the Richmond Young Men's Hebrew Association, and was vice-president of the Zionist Organization of America, Seaboard Region, and also president of the Richmond District as well as being associated with other organizations of his race. Dr. Karp had been a member of the Medical Society of Virginia for a number of years. His wife and two daughters survive him.

Dr. Edmund Henry Lewis,

Gordonsville, died on February 4, in University Hospital at Charlottesville, Va., death being due to

pneumonia. He was seventy-six years of age and had been in bad health for sometime. Dr. Lewis graduated from Jefferson Medical College of Philadelphia in 1887 and had been a member of the Medical Society of Virginia for a number of years.

Resolutions on Dr. Stark Armistead Sutton.

The following resolutions were recently adopted by the Staff of St. Vincent's Hospital:

Dr. Stark Armistead Sutton was born in 1872, and received his preliminary education at Mr. Galt's School in Norfolk, and his Medical Degree from the University of Maryland in 1894.

He began the practice of medicine with his father, Dr. William T. Sutton, in Norfolk, and immediately associated himself with St. Vincent's Hospital. He was connected with the Health Department of the City in various capacities for many years. He was a member of the Norfolk County Medical Society, Medical Society of Virginia, and American Medical Association. At the time of his death, he was one of the Chiefs in the Gynecological Department of St. Vincent's Hospital.

WHEREAS, on April 1, 1938, Dr. Sutton passed to his reward;

BE IT RESOLVED, that in his passing, St. Vincent's Hospital has lost one of its most loyal friends; and,

BE IT ALSO RESOLVED, that the physicians of the Staff of St. Vincent's Hospital have lost a most lovable associate and companion; and,

BE IT FURTHER RESOLVED, that a copy of the resolutions be spread on the Minutes of the Staff, and a copy sent to the family of Dr. Sutton, and that they be published in the VIRGINIA MEDICAL MONTHLY.

J. WARREN WHITE, M. D.

JAMES W. HUNTER, M. D.

RUFUS S. KIGHT, M. D.

Committee.

An Appreciation on Dr. J. B. Wolfe, Jr.

The Clinch Valley Medical Society, at a meeting at Norton, April 30, 1938, adopted the following:

At 4 A. M., April 7th, when trying to catch a nap in the hospital he founded, after working hard way past midnight, the heart, which had wavered and faltered many years, stopped for Dr. Joe B. Wolfe, Jr.

Born in 1869, the son of a physician, he was graduated in medicine in Louisville in 1891, and then at intervals took a number of post-graduate courses in New York. He continued to read and study his individual cases to the end. Of keen intellect and philosophic bent, a keen appreciation of humor, he never played and had no hobbies but his work. He was the dean of the Wise County doctors, who tried hard to have him write and lecture from his rich experiences and profound knowledge of medicine but his modesty prevented his doing either. They bestowed upon him every honor available.

No man within the memory of the oldest of us did as much for the poor as Dr. Joe. No one was ever turned away by him or his hospital for lack of money. No wonder that the mile long procession followed his remains in the worst snowstorm of the winter ten miles to the cemetery at Ramsay, and the slender debutantes in their flimsy garments of silk wept with the aged tottering grandmothers in black as the man of God said the final word and Dr. Joe had gone to join Luke and the multitude of other good doctors gone on before.

Our hearts go out to the family and his clientele. We shall miss him; we shall remember him.

W. A. BAKER

G. T. FOUST

T. J. TUDOR

Committee.

Dr. Wade Hampton Frost,

Professor of Epidemiology and former dean of the Johns Hopkins University School of Hygiene and Public Health, Baltimore, died May 1. He was a native of Marshall, Virginia, and a graduate in medicine of the University of Virginia, 1903. During the World War, Dr. Frost was director of the Red Cross Bureau of Sanitary Service, and the Public Health Service placed him in charge of the study of influenza in the 1918 epidemic. His wife and a daughter survive him.

Dr. Ross Vernet Patterson,

Dean of the Jefferson Medical College, Philadelphia, died May 4. He was sixty-one years of age and graduated from the Jefferson Medical College in 1904.

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VIRGINIA MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

69th Annual Meeting, Medical Society of Virginia, Danville, October 4-6, 1938

Vol. 65, No. 7,
WHOLE No. 1033.

RICHMOND, VA., JULY, 1938

\$2.00 A YEAR
25 CENTS A COPY

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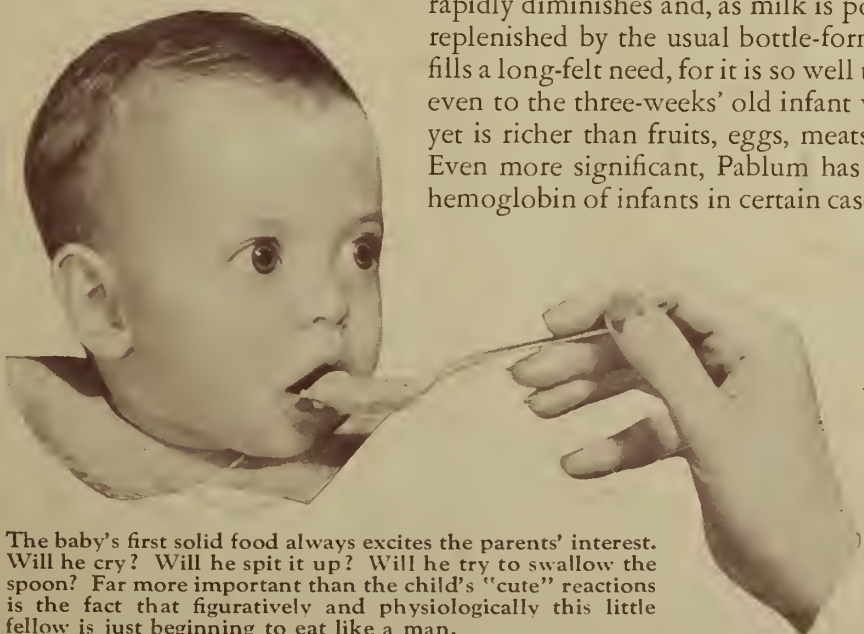
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Official Publication of the Medical Society of Virginia

Vol. 65, No. 7,
WHOLE No. 1033.

RICHMOND, VA., JULY, 1938

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25 CENTS A COPY

THE MANAGEMENT OF SOME COMMON SKIN DISEASES BY THE GENERAL PRACTITIONER.*

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It is always difficult for the specialist to submit practical procedures which can be applied by the general physician. And this difficulty arises largely from the uncertainty as to the logical limits of the activities of the general practitioner.

The principal cause of this uncertainty is apparent: namely, that the present basis for fixing the boundaries both of general practice and of the various medical specialties is obviously founded upon practical considerations, and not upon exact scientific or logical division and classification. Pediatrics, for example, is bounded by the criterion of the age of the patient; endocrinology, by the effects of a special system of glands, characterized by the absence of ducts. The fields of the surgeon, of the roentgenologist, of the physical therapist—all are determined by the modalities employed; the spheres of the syphilologist and of the tuberculosis specialist include all manifestations attributable to the respective etiologic agents; the province of the venereologist embraces those diseases which are usually acquired through sexual exposures; and, to terminate an enumeration which would prove more tedious than profitable, the specific organ or part affected determines the domains of many specialists, such as those of the proctologist, the gastroenterologist, the ophthalmologist, the neurologist, and the dermatologist.

When one considers these various and entirely different bases for division and classification, there can be little wonder that the boundaries between the specialties are so frequently wanting in sharpness of definition. Nor can one be astonished that this lack of sharpness often leads to the vexing

question as to where one specialist's activities should rightfully cease, and where another's should begin: a question which is, not uncommonly, highly and bitterly controversial, and which so often presents a problem inaccessible to satisfactory or accurate solution.

When, in the light of the foregoing, one considers the boundaries of the province of the general practitioner, one finds that the lines of demarcation are here not only the most vague and unsharp, but also the most inconstant and elastic. For most particularly the general practitioner's field is incessantly widened or contracted by many variables, such as the accessibility or lack of accessibility of various specialists, the bent and training and particular aptitude of the individual practitioner, the inclination and choice of the individual patient; and, perhaps unfortunately but most certainly, by the economic conditions of both physician and patient. These points are so apparent that they scarcely merit mention. The general practitioner in an isolated rural community will necessarily have to treat a much greater variety of conditions than the city practitioner who can readily call upon an expert in every specialty. Similarly, the general practitioner established in a poorer community will be less able to call upon specialists; and in bad times or depressions (or even in recessions), both patient and physician will be less inclined to have recourse to a specialist. Because of these and other factors, one encounters every conceivable kind, character, and size of general practice. On the one extreme, there is the fashionable city practitioner who, if he called upon every available specialist at every opportunity, would soon shrink to the status of a mere routing-and shipping-clerk; and, on the other extreme, there is the doctor who is forced by circumstances to manage every presenting malady and situation, and who

*Based on a paper read before the Norfolk County Medical Society, Norfolk, Va., on March 21, 1938; and on the Seventeenth Lecture of the Twelfth Series of "Friday Afternoon Lectures" read at the New York Academy of Medicine on March 25, 1938.

often becomes adept in the treatment of an astonishingly wide variety of diseases.

I have indulged in this rather lengthy preamble in order to demonstrate the dilemma of a speaker when confronted with a title containing the words ". . . in general practice". For, not only does the scope and therefore the interest of the general practitioner vary from individual to individual, but the field of even one and the same man may expand and contract with Alice-in-Wonderland-like rapidity under the influence of ever-changing circumstances and forces. But in spite of the inherent difficulties, I hope that I shall be able to select for our present discussion certain dermatoses in which the milder cases should be well within the province of every general practitioner.

For examples, both acne vulgaris and certain common eczematous dermatoses will inevitably be encountered in every general practice. For it is generally acknowledged that acne vulgaris and the eczematous dermatoses—including eczematous "ring-worm" and so-called "athlete's foot"—today constitute the most common skin diseases. And it is unreasonable to suppose that early or mild forms of these skin affections will all be treated by specialists in dermatology, regardless of how wealthy the community or how accessible the specialist. Surely, the adolescent with a few occasional blackheads and "pimples", or the patient with a small patch of "eczema" or a slight scaly or itching eruption of the hands and feet will often necessarily be the problem of the general practitioner who, in many instances, may have been consulted primarily because of some other, non-dermatologic disturbance. It follows that, if the medical profession as a whole were somewhat better equipped to manage the innumerable mild cases of acne and of eczematous dermatitis, the public would be spared many of the present abuses. For, *if the general physician fails to exhibit interest in and knowledge of such skin conditions, it is inevitable that many of these mild cases will go—not to the dermatologist—but to some other source for information, for advice, and even for treatment.* And I believe that, not only the medical profession—including specialists and non-specialists—but also the majority of intelligent, unbiased laymen will agree that it is incontrovertible that even the mildest skin diseases *should be treated by physicians, and not by non-medical cosmeticians, beauticians, bar-*

bers, coiffeurs, masseurs and food faddists; and that most patients, even with the mildest dermatoses should most emphatically *not be left to the mercies of the druggist or to the diagnostic and therapeutic clairvoyance of the manufacturers, distributors and advertisers, who vaunt the host of magic proprietary remedies, alkalinizers, blood "purifiers", laxatives, fungicides, "glamorous" cosmetics, vitamin and endocrine creams and soaps, and panacea patent medicines or branded foods.* Nevertheless, the great profits which may be made from the sale of such preparations are mainly dependent upon continuous advertising, and this extensive and persistent "high pressure" advertising has largely succeeded in befuddling and misleading the public, so that it seems to me possible that in this country today only the smaller number of sufferers from mild and common dermatoses is being treated by physicians; while the greater number is seeking relief in remedies and procedures which are often not based on scientific and established fact, but rest solely upon false claims and absurd superstitions. Such superstitions include, for example *the myth of "skin foods"; the saga of "getting out the poison"; the fantasy of "too rich blood"; and the fairy tale of "too much acid".*

All these self-evident evils can be controlled only if the family physician ceases to display indifference when his patients with colics or colds or "rheumatism" ask his advice regarding their complexions and acnes, or concerning their "eczemas" or "athlete's foot". And furthermore, it seems to me apparent that the physician who tries to help his adolescent patients over their acne, or the housewife over her eczema, will gain more confidence and esteem than his colleague, who shrugs his shoulders or turns his back.

I believe, therefore, that each general physician and every non-dermatologic practitioner should be familiar with the basic concepts of pathogenesis and mechanism of the most common skin affections; and should be proficient in at least a few of the correct, simple, modern measures for initiating the treatment of mild cases of certain of the most prevalent skin diseases, such as acne vulgaris and eczematous dermatitis both of fungous and of non-fungous origin.

ACNE VULGARIS

Acne vulgaris is undoubtedly in some way based upon the functions of the endocrine glands, and is

directly or indirectly connected with gonadal activity. The proofs of this statement are convincing, but far too numerous and lengthy for detailed mention here. (For discussion and bibliography on this subject, see, for example, Sulzberger, Rostenberg, Jr., and Sher, *New York State Journal of Medicine*, 34:1, 1934; J. Michael, *J.A.M.A.*, 105:327, 1935; and the leading article on therapy in *The Year Book of Dermatology and Syphilology* for 1933). Here I need cite only the facts that acne and baldness are practically unknown in eunuchs; that comedo-acne may be present shortly after birth when the infant's skin is still manifesting the effects of the maternal hormones; that acne vulgaris is absent during childhood and old age, and usually appears with the beginning of puberty and often disappears with the cessation of sexual development or of gonadal activity; that acne often exacerbates with the menses or with the new adjustments or maladjustments of menopause; that acne often exacerbates or disappears in pregnancy; and that the primary site of the acne lesion—the hair follicle and sebaceous gland (the so-called pilosebaceous apparatus)—is related to the mammary glands, the apocrine glands, and to those hair-producing organs which are well known to be highly susceptible to stimuli arising during puberty, stimuli which are in some way, directly or indirectly, connected with gonadal development and with the production of sex hormones.* But in spite of the recognition of the role of the endocrine glands in the production of acne vulgaris, no present method of endocrinologic therapy has proven itself to be generally useful in the treatment or in the prophylaxis of this dermatosis. I say this deliberately and advisedly, and in the face of the recent articles reporting the beneficial effects of the anterior

*Among the many additional arguments which can be advanced in support of the concept that acne vulgaris is in some manner related to the secretion of sex hormones, I should like to mention only the following: (1) Tars are known to cause acne lesions and to contain substances of phenanthrene structure. These phenanthrene sterols are chemically closely related not only to certain bile constituents and to ergosterol and to vitamin D, but also to the male and female sex hormones. They belong to a group of substances known to possess both estrogenic and carcinogenic properties; substances known also to be capable of producing the type of epithelial stimulation or irritation which leads to follicular hyperplasia and hyperkeratosis, and to comedones and acne. (2) There is evidence that a disturbance of iodine metabolism may play a role in acne vulgaris; for, as Rostenberg, Jr., Sher and I (*loc. cit.*) have shown, even very small doses of iodine (and bromine) regularly produce new showers of lesions in acne vulgaris; and there is certainly evidence that, concomitant with sex-gland development and during

pituitary-like and of the ovarian follicular hormones. While it is a fact that a few isolated cases of acne may be benefited by hormonal treatment, the majority of these patients are helped more by the proper and judicious use of local superficial X-ray, than by any other remedy or groups of remedies. And it is deplorable that even today sufferers from severe acne are often denied possible relief because of general ignorance of the fact that roentgen treatment, as practiced by the well-trained and conscientious dermatologist, offers a method of treatment without danger and with the greatest chances of success. I believe that this is the place for me to state that the therapeutic index of proper dermatologic roentgen therapy compares favorably with that of the majority of remedies employed in modern chemotherapy. It is, therefore, my conviction that, wherever strictly indicated, roentgen therapy must be administered, rather than to allow the disfigurement of an active acne to continue to embarrass and to embitter these patients, and, as is not infrequently the case in adolescents, even to annihilate their chances for success, both in business and in private life. For such acnes, even though resistant to other measures, will nevertheless often yield to a dosage of the proper type of roentgen ray which lies well within the limits of absolute safety. However, the administration of X-ray, in order to be both effective and entirely safe, requires not only the strictest selection of cases plus special knowledge and technic, but also demands special apparatus. As a rule, only the dermatologist is equipped to give the type of superficial radiation indicated in skin therapy; and I must emphasize that the apparatus and the experience of even the trained roentgenologist is not essentially suited for the best radiologic treatment of acne. Moreover, before proceeding to roentgen therapy, it is obligatory for the dermatologist to consider in differential diagnosis, and to exclude the many other dermatoses

puberty, both thyroid function and iodine metabolism undergo definite alterations of adjustment. (3) Recent studies of T. Rosenthal and Kurzrock have demonstrated a low threshold of estrin in the blood and urine of females with acne. This makes it seem possible that a disturbed balance in the ratio of male and female sex hormones, and a preponderance of the male substance, may play a role in acne. This view is further supported by the fact that (as Br. Bloch has shown) acne vulgaris occurs earlier and is more severe in males; by the observation that acne often occurs in virilism; and by the observation of the physiologic hormonal changes at puberty, in which the pilosebaceous apparatus of face, back, and chest develops to a greater degree in males than in females (beard, body-hairs, etc.).

which may simulate acne vulgaris (acne rosacea, acne varioliformis, acneforme tuberculids, acneforme drug eruptions, acneforme sycosis, and acnes from external causes such as face creams and oils, other cosmetics, woolen and dyed garments, industrial oils, greases, paraffins, tars, chlorinated diphenyls, etc. In view of this, it is certain that the X-ray treatment of acne is decidedly beyond the scope of the non-specialist. And, furthermore, I repeat that in a disease like acne vulgaris, with its eventual usually good prognosis, X-ray need not and should not be used—even in the safe hands of the dermatologist—except with strictest indications, and in cases which the specialist adjudges to be resistant to other measures.

Fortunately, many mild cases of acne do not require the lengthy and often costly expedient of X-ray; and gratifying results often follow the local and other therapeutic measures which I shall now mention, measures which are all within the reach of the general practitioner and of all non-specialists.

Whatever the causal factors may be, the disease acne vulgaris, with its accompanying comedones, patulous follicles, oily or dry seborrhea and dandruff, is due primarily to a stimulus leading to a quantitative and/or qualitative change in the activity of the sebaceous glands, and to occlusion of their orifices by osteo-follicular hyperkeratosis. While X-ray is assumed to achieve its beneficial effect by diminishing the activity of the sebaceous glands, almost all local measures owe their efficacy to their faculty of removing the plugs from the duct orifices, and of preventing the formation of new plugs. In many cases of acne, I have found greases and stearic acid "creams" (ordinary cold-creams, skin and tissue foods, vanishing creams, etc.) contraindicated; for these tend to remain in the minute follicular openings, and thus to form a basis for new plugs. However, in some cases, creams containing keratolytics, such as sulphur and resorcin, are of distinct value when properly prescribed and applied.

The softening and removal of the obstructions in the plugged follicles may be accomplished in several ways.

The first way I shall mention is the employment of the softening and macerating action of hot wet dressings or of steaming the face. Almost any solution, if applied conscientiously for an hour or more daily, in the form of steaming hot towels, will achieve the desired softening of the comedones and will act

as an antiphlogistic in speeding the cure of the papules and pustules. Therefore, saturated solutions of boric acid; Burow's solution 1:20; or a weak aqueous solution of alcohol (1-5 per cent) will be found effective when properly employed as hot applications. Liquor calci sulfurati (Vlemminckx's solution), diluted with twenty parts water, is perhaps the most effective form of hot wet dressing. While the last-mentioned solution has the decided drawbacks of its strong disagreeable odor (H_2S), and of its action in turning the fingernails brown and of forming black sulphides on white metal reached by its fumes (silver, platinum, white gold, etc., will turn black, while nickel and chromium plate will remain unaffected), nevertheless, in severe cases, its action is so superior that I employ it regularly. The patients are, of course, to be warned of the odor; and to be told that they must put away white metal jewelry, utensils, silverware, etc.; and that they must protect their nails by wearing rubber gloves. Assiduous employment of such hot wet dressings—say one hour A.M. and P.M. for one or two weeks—will sometimes benefit cases refractory to all other measures, even including X-ray.

A second measure to achieve the desired keratolysis of the horny plugs and the clearing of the follicular orifices is the employment of keratolytic lotions and of the above-mentioned keratolytic creams. These may be prescribed alone, or to great advantage in combination with the applications of moist heat. For example, I usually order a steaming with one of the above solutions on hot towels for one-half hour before retiring, and then the overnight application of the keratolytic lotion or cream. Removal of the adherent lotion or of the cream is to be accomplished in the morning through another one-half hour of hot wet applications; or, in some cases, the morning treatment may consist of merely washing off the remaining adherent deposit of lotion or the remaining cream with soap, hot water, and a complexion brush.

In all these procedures, the desideratum is to achieve a definite but correctly adjusted keratolytic effect, one which can be maintained, but which will not prove too irritating. For this reason, it is necessary to steer a wary course between the Scylla of insufficient action, due to too weak remedies, and the Charybdis of excessive effects, due to remedies which cause unnecessarily severe irritation, redness,

soreness, and sometimes even swelling and vesiculation and severe dermatitis.

To avoid both these dangers, it is advisable to proceed slowly and cautiously. Each skin is different; and the art of the topical management of acne is to find the correct amount of treatment and the proper concentration of keratolytics to achieve the desired mild peeling. I, therefore, almost always prescribe a lotion whose strength can be delicately adjusted and varied at will, a lotion which will "turn out" as prescribed, no matter where dispensed—in preference to the almost universally employed, but often unreliable and variable, *lotio alba*. The following are my usual prescriptions:

- (1) Resorcini 2%-10%
 Sulphur precipitati 2%-10%
 Zinci oxidati
 Talci $\bar{a}\bar{a}$ 15.0-20.0
 Glycerini 15.0-20.0
 Aquae
 Spiritus $\bar{a}\bar{a}$ ad 120.0

- or (2) Resorcini 2%-6%
 Sulf. Precip. 2%-10%
 in Unscented Cold Cream.

One begins with the lower concentrations of resorcin and sulphur, and works up in the course of a few weeks, thus reaching concentrations which continue to effect that slight degree of dryness and almost invisible scaliness which I have learned to consider the optimum effect in most cases. The lotion prescribed can not only be adjusted in strength by varying the quantity of resorcin and sulphur, but can be made thicker or thinner, merely by varying the quantities of the zinc oxide and talcum— $\bar{a}\bar{a}$ 10.0 makes a thin lotion, $\bar{a}\bar{a}$ 25.0 to 30.0, a very thick one. (The latter is best dispensed in a jar).

The thicker form is desirable when patients seem to be negligent in carrying out the prescribed treatment. For the thick lotion necessitates some time for its removal, and thus guarantees the proper morning cleansing, either in the form of the morning hot wet application or the morning soap and water scrub. I have encountered not only adolescents, but also older women who, until this treatment was prescribed, had not given their face a proper washing for variable long periods reaching to many years.

In this connection it may be said that scrubbing several times a day with a rough Turkish cloth or

with a soft or stiff complexion brush and with a good, bland, and not highly scented white soap and hot water is, in itself, an excellent treatment for acne vulgaris. Sometimes this alone will clear the follicles, and thus suffice to keep the dermatosis under control.

I do not know why care of the scalp should be important in managing acne vulgaris, but I have found this to be true in some cases, particularly in those with lesions near the hair margins. For this reason, the dandruff or oily scalp, which so often accompanies acne, should be treated. Shampooing not less than once weekly, and the daily application of alcoholic scalp lotions containing resorcin monoacetate (1 per cent-2 per cent) and minute amounts of bichloride of mercury (one-half per mille to one per mille) have been found effective as a scalp treatment. A useful formula is as follows:

| | |
|---------------------------------|-----|
| Resorcini monoacetati | 4.0 |
| Acidi Salicylici | 4.0 |
| Hydrarg. bichlorati | 0.2 |
| Glycerini | 4.0 |
| Spiritus | |
| Aquae $\bar{a}\bar{a}$ ad 240.0 | |

(In patients with blond, gray, or white hair, the resorcin compound must be omitted, as it tends to discolor and darken light hair).

Regular shampooing with a tar shampoo is, even alone, a good method to keep mild dandruff under control; and the idea that water tends to cause baldness or to "rot the hair" is no more than a superstition without basis in fact.

While acne vulgaris patients should, in general, avoid face creams, oils, greases, facial treatments, massages, etc., powder and dry rouge may be permitted in most instances. I believe that face powders containing precipitated sulphur have some beneficial action, and may tend to prevent recurrences. For young girls and women with acne, I recommend, therefore, such a sulphur-containing face powder which patients can now purchase in pleasant form and in all the various usual shades.

Unfortunately, I cannot here discuss the many ramifications of the question of the general and systemic treatment of acne vulgaris. It must suffice if I say that the patient's general condition should be brought up to par, if found low in any respect (constipation, anemia, foci of infection, etc.).

On the question of diet, I have come to hold views

which may represent some departure from the orthodox. I do not believe that fat or carbohydrate-high diets, as such, are important causes in the majority of the well-known exacerbations of acne vulgaris; but I believe that these exacerbations are due, rather, to an intolerance to specific foods which these diets may contain. Together with Fred Wise, I first expressed this opinion some years ago (Ref. Year Book of Dermatology and Syphilology, p. 10, 1933). And this view has recently received confirmation in the reports of Cleveland White and others.

The first to be mentioned among the ingested substances which I know to cause eruptions of acne-form lesions, are iodides and bromides (potassium iodide, iodized salt, bromo-seltzer, etc.). Even the very small quantities of iodine in iodized salt are sufficient to cause exacerbation of acne vulgaris in many predisposed individuals and particularly in adolescents. For this reason, the indiscriminate use of iodized salt in boarding schools and colleges is a foolish and pernicious practice. As a matter of fact, in my opinion the sale of iodized salt should be regulated by law, so that a physician's prescription would be required, except in those "goitre belts" in which an increased supply of iodine may be indicated for the entire population.* While iodine and bromine are by far the most frequent offenders among the drugs, I believe that in rare instances such drugs as salicylates, barbiturates, and anilin- and pyridine derivatives have produced exacerbations in some of my patients. However, after iodides and bromides, not drugs, but chocolate (in any form) is, in my experience, surely the next most common cause of new papules and pustules in acne. Several other foods seemed to play a harmful role in certain of my individual cases (nuts, oatmeal, fish, spinach, cheese, pork, etc.).

In a very few isolated cases of long standing, which have resisted other measures, the general question of food idiosyncrasy or allergy may merit more detailed and careful consideration; but, as a rule, the solution to acne vulgaris has not, in my experience, been achieved through dietary restriction.

In some cases, I have found the treatment of the secondary bacterial pyogenic factor to be useful. For this purpose, particularly in cystic cases of long

standing, acne vaccines, staphylococcus vaccine, or, more particularly, staphylococcus toxoid are worthy of trial. But here, too, I must emphasize that this form of treatment is not likely to be of use in the majority of ordinary cases.

In isolated instances, other forms of treatment are sometimes helpful. Among these, arsenic by mouth (Fowler's solution) or by subcutaneous injection (sodium arsenate), injections of gold salts, of turpentine, of foreign protein, etc.—each may, in a few and obviously exceptional cases, lead to success. As before mentioned, the same may be said of treatment with anterior pituitary-like and with other hormones. In my hands, treatment with small doses of female sex hormone by mouth has seemed to be slightly more effective than any other endocrinologic approach. I give fifty units (0.075 mgm. of crystalline dihydroxyestrin) two to three times daily; and in some few cases the beneficial effects have been undeniable. I do not know the reason for or the mechanism of this action, but since larger doses have seemed less effective, or have even caused new crops of lesions, I am inclined to attribute the result to a desensitization (perhaps of the pilosebaceous structures), rather than to a substitution therapy.

It is undeniable that even the use of all the above measures, and even roentgen therapy, all fail ignominiously in a certain—fortunately small—percentage of cases. Because of this, and because of the expense and the time required for roentgen treatment, the search for new and simple remedies for acne must continue. A few years ago, Drs. Rostenberg, Jr., Sher and I (*loc. cit.*) suggested the use of sodium chloride (large doses, 10-15 grams by mouth, daily—in the form, for example, of the 1 gram tablets prepared by E. Lilly) in the effort to eliminate the possibly harmful excess of iodine. This treatment, beneficial in a few cases, has not proven of general value. Recently some of my collaborators and I have been experimenting with the internal administration of drugs which may be supposed to inhibit the activity of the sebaceous glands (sympatheticotropic [adrenergic] and parasympatheticotropic [cholinergic] drugs). We have also tried, for example, camphor given by mouth and by injection. Our experiments in this direction are based on the reports of camphor's effect on inhibiting the secretion of the mammary glands. (J. Rosenblatt. See also, for example, Klein, M.D., *Am. J. Obst. & Gyn.*, 31; 894, 1936).

*Fatal cases of iododerma from iodized salt have been reported. And no doubt can exist that iodized salt may suffice to elicit attacks of thyrotoxicosis and serious disease in a few peculiarly susceptible individuals.

The sebaceous glands are, of course, close relatives of the mammary and of the apocrine glands. Our investigations in this general direction have just begun, and permit hopes rather than conclusions.

ECZEMATOUS DERMATITIS

Under the heading eczematous dermatitis, one must today include all eruptions in which other diagnoses can be excluded, and which present the essential features of vesiculation (clinical or histologic) plus one or more of the adjuvant characteristics of redness, swelling, oozing, itching, papulation and/or lichenification; and in which the principal seat of reaction can be demonstrated—by histologic study—to be within the epidermis.

In this group I here deliberately include the eczematous types of superficial ringworm of the glabrous skin, and secondary and disseminate eczematous eruptions produced by fungi and other microorganisms and/or their products. This inclusion is based not only upon theoretical considerations, but even more directly upon practical issues. For, as Wise and I have most recently set forth in our Year Book article on therapy (*Modern Treatment of Common Fungous Affections, Year Book of Dermatology and Syphilology—1937*), the eczematous forms of ringworm are in all probability based upon a mechanism similar to the eczematous reactions to other allergens—that is to say, the products of the fungi sensitize the skin in a fashion analogous to that in which the products of a plant, such as poison ivy or primrose, or a simple substance, such as a hair dye or formalin, sensitize the skin. For this reason, the prophylaxis of the common types of fungous eruptions most certainly does not consist exclusively in the prevention of infection—for we adults in this country are practically all infected and carry our fungi around with us, in our toe-nails and often in scarcely perceptible scaling or macerated sites between the toes, in the groin, in the perianal or intergluteal areas, etc. Logical prophylaxis, therefore, consists not mainly in employing fungicidal baths, fungicidal salves and tinctures, etc., but rather in preventing an increase in fungous allergens by arresting an increase in the amount of dead, macerated and cornified tissue and debris which may adhere to the skin. For it has been shown that fungi of the particular species in question cannot multiply in living, but only in dead tissue. It is for this reason that maceration, such as occurs when

the skin is exposed to the effects of swimming-pools, showers, etc., and which often appears in intertriginous areas on the slightest friction and sweating, tends to increase the amount of culture medium available for these fungi. Thereupon, when the growth of fungi exceeds a certain limit, the fungous allergens which they produce may exceed the limit of tolerance of the given skin area, and thus produce the skin reactions which are recognized as clinical disease in the form of eczematous fungous dermatitis. The same mechanism may lead to an increased absorption of fungi and/or their products from an intertriginous focus—and thus secondarily, to the disseminated hematogenous, vesiculo-papular, and eczematous dermatophytids. I cannot go into further detail here, but must refer those interested to the summary of my views, as set forth in the mentioned article. Those who read this article will see that, in my opinion and experience, proper drying between the toes and in all intertriginous areas, the use of any mild alcoholic solution (even eau de Cologne, for example!), followed by the plentiful use of a plain absorbent talcum and kaolin powder between the toes, in socks or stockings and in shoes, is perhaps not only the simplest, but the best prophylaxis of “athlete’s foot.” These mild and innocuous measures will do more to prevent the accumulation of intertriginous debris, and will thus do as much to prevent outbreaks of athlete’s foot as can possibly be achieved by strong fungicidal agents. For even the best fungicides now available will surely sensitize and irritate a certain percentage of users, and can nonetheless never sterilize and keep sterile the skin and nails, as far as the usual fungous flora is concerned.

Not only in prophylaxis, but also in the treatment of eczematous fungous eruptions, the production of desquamation of the skin and the removal of the fungous colonies plays an important part; so that here, too, the treatment often consists in the elimination and removal of allergens, rather than in the killing of parasites. And in achieving this desquamation and removal, the natural eczematous process itself is, in itself, often adequate; and in many other cases the natural reaction leads first to an exudative and then scaly stage which requires but little assistance. This assistance towards therapeutic desquamation can be given in the form of such mild drying lotions as calamine and zinc oxide with the

addition of 1-3 per cent resorcin; or of a very dilute tincture of iodine (one-half to 1 per cent in alcohol), or often simply with bland powders, or washing with 35 to 70 per cent alcohol; and later, in the end stages, through the application of such a mild emollient as, for example, borated vaseline.

While the above measures are, of course, more specifically intended for eczematous dermatitis in which fungi have been demonstrated as causal agents, it may here be stated that in eczematous dermatitis—whatever its cause, whether due to fungi, or to external or hematogenous exposure of the skin to so-called sensitizing agents capable of producing eczematous hypersensitivity,—the essential and broad principles of non-specific local and topical treatment remain the same. In general, it may be said that unless the cause is either obvious or easily ascertained, its discovery will require the facilities and special knowledge which are usually beyond the realm of the non-specialist; and it is therefore pleasant to be able to tell the non-dermatologist that the discovery of the etiologic agent, while undoubtedly extremely important, is not necessarily a *sine qua non* in the management of many cases of eczema.

In discussing the protean and diverse forms of "eczema" not due to fungi, I can only repeat that, whatever the cause of an eczematous eruption, the application of the proper local remedies is an essential part of the management. Here, again, superficial X-ray, while a sovereign remedy particularly in the subacute and chronic forms, should not be applied without the strictest indication or without the highly specialized technic and apparatus which are usually available only to the dermatologist.

In the topical applications, however, the general physician has a potent weapon, one which, when correctly used, will bring relief in most cases of eczematous dermatoses.

The fundamental dictum in the local treatment of all "eczema" is: the more acute, the more angry, the more highly inflamed the skin condition—the milder must be the treatment employed.

Therefore, in the acute, edematous, erythematous, vesicular, bullous or weeping eruptions, wet dressings are the first choice. However, these dressings must be correctly applied—for improper wet applications are likely to do more harm than good. There is just as much special knowledge and skill necessary for dermatologic as for surgical dressing; and

dermatologic dressings are often more difficult and more tedious to apply. A wet dressing *must* be kept sopping wet. Neither absorbent cotton nor ordinary gauze is the correct substance to employ. Absorbent cotton packs down too tight and hard; and gauze is too loosely meshed, and presents too rough a surface. Old soft linen, old cotton cloth (pillow slips, sheets, napkins, tablecloths, white shirting, etc.) should be folded four or more times, soaked in the indicated solution, and applied *evenly* to the affected parts. These dressings must be literally dripping wet, and must be kept so. For this reason, they must be changed every fifteen to twenty minutes. And again for this reason, oil silk, rubber sheeting, or other impermeable material must be used to protect the bed, pillows, furniture, etc., when these dressings are being applied. In very acute conditions, the wet dressings should be kept uncovered, as the speedier the evaporation, the greater the antiphlogistic and cooling effect, and the greater and speedier the relief. But in many cases, rather than to allow drying, it may be advantageous to apply a covering of oil silk over the wet cloths, thus preventing too rapid evaporation, and thereby demanding less frequent changes of dressing.

I have gone to some length to explain what is perhaps an obvious technic. But I believe that the manner of the application of a wet dressing is even more important than the solution employed.

In many instances, the circumstances are such that it is at once obvious that no wet dressings can be used (generalized dermatoses, poor nursing facilities, ignorant or uncooperative patients, etc.). It is then preferable, in my opinion, to dispense with wet applications, rather than to let these be incorrectly used (allowed to dry, for example).

As solutions for wet applications, one may employ either Burow's solution diluted 1:20, or boric acid solution (saturated); or, if nothing else is available, milk may be used. Many other solutions are employed: physiologic saline, Thiersch solution, dilute eau d'Alibour, etc. For areas with secondary pustulation or with marked denudation and epidermal defects, I find an aqueous solution of silver nitrate $\frac{1}{4}$ per cent, $\frac{1}{2}$ per cent to 1 per cent to be the unparalleled wet dressing.* Potassium per-

*In the last fourteen years I have seen these dressings used on many hundreds of patients and have encountered no case of argyria. Moreover, I know of no report of argyria from this particular use of silver nitrate.

manganate as soaks or wet dressings (1:5,000 to 1:20,000) is also useful in impetiginized, pustulating, or infected acute dermatitis (fungi, yeast, cocci, etc.).

Lotions or powdery suspensions are the next after wet dressings in mildness; and are to be used either in subacute dermatitis, or after wet dressings have done their work, or when wet dressings cannot be applied. This last eventuality is common; for many patients cannot—and more, will not—take the time or trouble to apply wet dressings. Moreover, certain parts of the body (the back or the chest, for example) cannot well be treated with compresses; so that when an acute dermatosis is generalized or affects very large areas, the wet dressing idea is best abandoned, and failing the facilities for a permanent bath, lotions or powders must be employed.

An excellent basic lotion for such purposes is:

| | |
|---------------|-------|
| Zinci oxidati | |
| Talci āā | 40.0 |
| Glycerini | 30.0 |
| Aquae ad | 240.0 |

To this, one may add one or more of the following:

| |
|--|
| Menthol $\frac{1}{8}\%$ to $\frac{1}{2}\%$ |
| Phenol $\frac{1}{4}\%$ to 1% |
| Acid Salicyl. 1% to 2% |
| Liquor carbonis detergens 5% to 20% |

And in cases of subacute eczematous conditions in which fungi (trichophytos or monilias) or skin cocci may be playing a role, Cinnabar 1 per cent or resorcin 2 per cent to 4 per cent, added to the above basic lotion, often proves effective.

Here, again, the mode of application is important. These lotions should be painted evenly and freely on all the affected areas, with an ordinary two-three inch-wide flat varnish brush, obtainable in a paint or hardware store. The lotions should be applied carefully, four or more times daily.

When a generalized eruption is being treated, the above basic lotion may sometimes be modified through the use of alcohol and water, equal parts, instead of just water. This will facilitate drying. Moreover, in widespread dermatoses, the amount of menthol must be reduced, as the larger amounts often produce chills; and when resorcin or other phenolic substances are employed, the remote possibility of toxic effects must be borne in mind, and the urine be examined at regular intervals.

In subacute conditions and on sites where bandages can be applied, pastes are the next in order of mildness. A paste, due to the porosity achieved by its high content of suspended particles, has an entirely different action from that of an ointment. Pastes do not dam up the secretions to the extent that ointments do. A paste, properly dispensed and applied, is dry; and has often an effect which is drying rather than emollient, an effect more closely resembling that of a lotion than that of a grease.

Lassar's paste is an excellent standard remedy when correctly made by a capable druggist. In some cases, it may then be used even in acute and oozing conditions,—for example, in a vesiculating eczema of the hands, when wet dressings cannot be employed, or after wet applications or soaks have done their work.

Salves may be used in the subacute dry or scaly, or chronic lichenified eczematous dermatoses, when these conditions are not too widespread. It is my opinion that, for purely practical reasons, patients with very widespread dermatoses (unless they can be hospitalized) must be treated with lotions rather than with salves.

Of ointments which can be recommended, the simplest are: plain vaseline, borated vaseline, boric ointment, or zinc oxide ointment. These are not likely to be beneficial on acutely inflamed, blistering or oozing surfaces; and should not be used, as a rule, in hairy or intertriginous areas.

As the skin condition under consideration becomes less and less acute, stronger and stronger adjuvants may be incorporated in the pastes or ointments. Of the many possibilities, I can here mention only the fewest selections. These are here listed in approximate order, ranging from the most indifferent and the mildest to the stronger medicaments:

| |
|---------------------------|
| Naftalan 5% to 10% |
| Sulphur precip. 5% to 10% |
| Acid. Salicyl. 2% to 10% |
| Oil of Cade 5% to 10% |
| Crude coal tar 2% to 20% |
| Resorcin 5% to 10% |
| Chrysarobin 1/10% to 5%. |

As antipruritics, one may add phenol $\frac{1}{4}$ per cent to 1 per cent, menthol $\frac{1}{8}$ per cent to $\frac{1}{2}$ per cent; and, when there is no indication of a hypersensitivity, or grave fear of inducing a sensitization, 5 per cent to

10 per cent benzocain. (In eczema, not only pre-existing sensitivity to medicaments, but also the possibility of later sensitization to previously tolerated remedies, must be borne in mind; and the local anesthetics all have a propensity for sensitizing, and must be used with awareness of this possibility.)

In very chronic, thickened, hyperkeratotic and lichenified conditions, combinations of strong remedies are sometimes useful; but these must always be employed with care and with full knowledge of their effects and by-effects.

It would, of course, be possible to go on almost indefinitely with this listing of topical remedies. I prefer to break off here, arbitrarily; and to close by emphasizing certain generalities.

The art of local treatment in eczematous dermatoses lies in the discovery of the proper remedy for the existing peculiarities of the individual case. In this, the vehicle employed (wet dressing, lotion, paste, or salve) is often fully as important as the active ingredients selected. And the correct technic of application and bandaging is the *sine qua non* of successful treatment. He who would treat eczematous dermatoses should familiarize himself with at least a few remedies. He should be well acquainted with the actual appearance, physical properties, and other qualities of his prescriptions: in other words, "how they make up". (I try never to prescribe a remedy which I have not seen, touched, smelled, and applied as a trial to my own skin.) In treating eczematous dermatitis of any kind, it is well to remember that these patients usually have their skin disease *because* they have "sensitive skins"; and that, for this same reason, they may be or may become extremely sensitive to almost any of the active remedies applied. Therefore, it is best not to prescribe any proprietary (which may contain any number of unknown sensitizing ingredients). Furthermore, it is desirable always to find out what has been previously used; and if the former remedies were properly applied and proved useless, or if they were said to have made the condition worse, these remedies and all their active constituents should be avoided in the new treatment. Begin cautiously with each new remedy; let it be applied to a small area for several days, and watch its effects. If there are several areas involved, or if the dermatosis is generalized, one may derive advantage from this situation by trying out several remedies at once. Thus, four different remedies can

be prescribed at a first visit, each to be used on a different area. In this way, one quadruples the chances of finding the correct topical agent at the very first visit.*

In closing, I can only repeat once again: In eczematous dermatoses, proceed cautiously; use common sense, and know the exact qualities and effects of what you prescribe; and remember that a few simple, mild remedies, correctly used, are often better than strong or complicated agents.

I am convinced that the physician will be successful only if he himself knows precisely how each topical agent is to be used; and only if he will take time and pains to instruct the patient in the exact objectives of the treatment and in the minutest detail of the procedures of the correct technic of local application and cleansing; and if he will then carefully check the treatment, observe its effect, and, if necessary, adjust and readjust his prescriptions.

I realize that I have unfortunately no more than touched upon a few points concerning the treatment of only two dermatoses. There are, of course, many other skin conditions which the general practitioner will be called upon to diagnose and treat. Among these, I may mention seborrheic dermatitis, psoriasis, pityriasis rosea, pruritus (including pruritus vulvae and ani), furuncles, and other pyodermas. However, the ordinary dermatologic text-book gives the basis for the simple management of these conditions; and to go beyond a text-book exposition would have required more time than is at my disposition today.

I have, therefore, thought it advisable to limit myself to a more detailed discussion of the two most commonly encountered types of dermatoses; and have attempted to present certain modern aspects and certain conclusions from personal experience, which could not be found in the ordinary text-book. And even in this I have not aimed at being exhaustive, but have tried to select that which was neither too well known nor too controversial, as well as that which was not obviously the distinctive problem of the specialist in dermatology. I realize that this rigid selection has narrowed this presentation, and that I have omitted many important points. For example, I have not touched upon the differential

*For a more detailed discussion of the technic of topical therapy see the leading article in the 1935 Yearbook of Dermatology and Syphilology; and also, for example, the article by William Garbe and me, *Some Technics of External Therapy*, *American Journal of Nursing*, Vol. XXXVI: 9, p. 873.

diagnosis of the various forms of acne and of "eczema"; nor mentioned the details of the often all-important search for etiologies by means of history, of elimination, and of skin tests. I have also omitted many important forms of therapy, such as treatment by desensitization with various allergens. Omissions of this type have been made because I am convinced that many of these procedures are, whenever possible best left to the specialist; and because I have felt that it would be impossible here to submit information that would be sufficient to prove of practical value to the general physician.

In spite of my recognition of its possibly too nar-

row scope, I conclude my present discussion with the hope that at least some of the points I have tried to make will prove of actual help to general practitioners; and that some physicians will be aided in their management of the problems of acne, of eczematous ringworm, and of other "eczemas". For, if this has been accomplished, it will enable some among this audience to confer additional benefits to their patients; and will save a certain number of sufferers from seeking non-medical advice, and from receiving treatment at the hands of the ignorant and unprincipled.

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CORONARY THROMBOSIS IN A TWENTY-SEVEN-YEAR-OLD MAN.*

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Coronary Thrombosis in a person as young as twenty-seven is sufficiently unusual to warrant a report of the following case.

H.A.K., aged twenty-seven, was seen April 17, 1937, in consultation with Dr. T. E. Rucker, through whose courtesy I am allowed to report the case. He had been taken sick on the thirteenth with a presteral pain so severe that it necessitated his stopping work. Dr. Rucker saw him soon afterwards and his examination was entirely negative. He took a total of four grs. of codeine before obtaining relief—sometime after midnight. On the sixteenth and again the next day Dr. Rucker noted frequent premature beats and then felt suspicious of a coronary occlusion. There had apparently been no fever and the blood pressure was not recorded at first.

When seen on the seventeenth examination was as follows: The patient was rather stocky; the pulse was seventy-six and perfectly regular, the blood pressure was 125/80, temperature 98.2. The heart examination was negative as was the general physical examination. On account of the severity of the pain and the previous finding of premature beats, it was thought advisable to take an electrocardiogram. This showed typical curves of a recent coronary occlusion

of the T-3 type. Figure one shows this tracing together with three subsequent ones which show a gradual approach to the normal type.

A detailed study of the personal and family history of the patient was made. He was twenty-seven years old, unmarried and had worked since 1928 as cost accountant in a large manufacturing concern. His father died of apoplexy at sixty-three and his mother was living, age sixty-six, and in very good health. One of his mother's sisters died at sixty-seven of diabetes and another at fifty-nine of coronary thrombosis. The patient has four sisters and one brother, all in good health.

He had been in excellent health in the past except for an attack of chorea at the age of seven, which kept him in bed for three months. Regarding his habits this patient smoked from one and one-half to two packs of cigarettes daily and drank from four to six cups of coffee. He used alcohol only over the week-end—one to two pints. He averaged eight hours' sleep, got very little exercise, was a very large eater, especially of bread, potatoes, sweets and meat. His working hours were from 8:30 a. m. to 5 p. m. with one and one-half hours off for lunch; from about the fourth to the ninth of each month his hours were considerably longer, averaging from 6 a. m. to 6 p. m. with one hour for lunch. During this period he worked under considerable pressure or nervous tension.

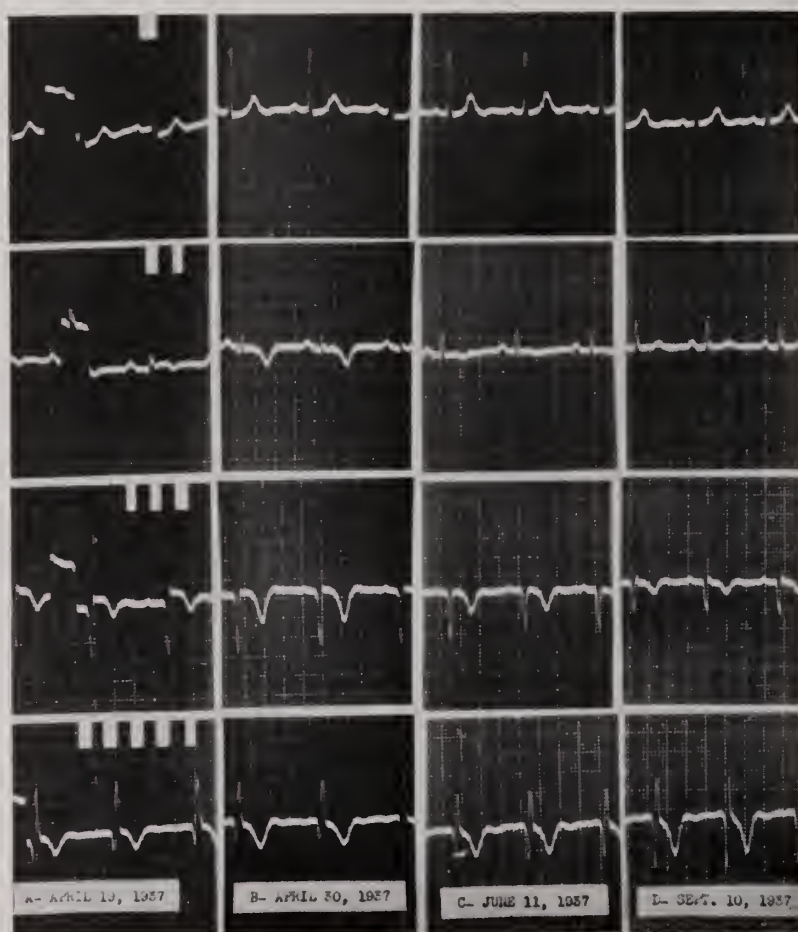
*Read before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, Va., October 12-14, 1937.

This paper and the succeeding paper by Dr. Golston are discussed conjointly.

This patient was kept in bed for seven weeks. On September 17, his heart examination including a seven-foot plate was entirely negative, although his electrocardiogram was still abnormal. His B. P. was 150/90. The blood Wassermann test was negative.

Many authors in recent years have reported one or more cases of coronary disease in patients under forty. Stolkind¹ reported four cases of angina pectoris in children and twenty-five cases from the litera-

terest was their finding that syphilis was no more frequent in the coronary than in non-coronary cases. Durant,³ in a series of 114 autopsied cases of coronary thrombosis, found seven cases aged thirty-five or under; all were male. Glendy, Levine and White,⁴ at the 1937 meeting of the A. M. A., read a paper on "Coronary Disease in the Young". They reported a series of 100 cases of angina pectoris and coronary thrombosis in patients under forty. Of this number



Note that in D-1 the S-T segments have returned to the isoelectric line and T-2 has become upright.

ture between the ages of six and fourteen. Levy, Bruenn and Kurtz,² in a review of autopsies at the Presbyterian Hospital in New York from 1910 to 1931, note the increasing incidence of coronary disease, especially in the age group twenty-five to forty-four. In a total of 2,877 autopsies, coronary arteriosclerosis of varying degree was found in 762 cases, an incidence of 26.5 per cent. Coronary thrombosis was found in seventy-two cases and nineteen of these were under forty-five. Of in-

seventy-eight had thrombosis proven either at autopsy or by electrocardiograms. Only four cases in the whole group were females. Their paper, yet unpublished, is the most comprehensive that we have seen. Smith and Bartels⁵ reported two cases of marked cardiac hypertrophy with coronary thrombosis, both male aged thirty-five and thirty-six. They present a table of twenty other reported cases of coronary thrombosis in patients aged forty or less.

In the table below we have added to theirs all

the other reported cases that we have been able to find. The age and sex are given where this is known. The predominance of the male sex is noteworthy. If we count only the reports where the sex is given, there are seventy-one males and seven females—a proportion of ten to one.† According to Smith and Bartels the youngest reported case is twelve; we have not consulted the original article. Sprague and Orgain⁶ reported two cases in boys of fifteen. Jamison and Hauser's case was eighteen; May's⁷ youngest case was nineteen.

It is interesting to speculate as to the cause of the increasing occurrence of coronary thrombosis

†This is excluding Glendy, Levine and White's large series.

in the young. Arteriosclerosis is the pathologic lesion invariably found in all of the cases referred to in this paper that have come to autopsy. Coronary embolism is an extremely rare condition, although it has been recorded. The reported cases of coronary occlusion in infants have been from this cause.^{8,9} Arteriosclerosis, however, has been found in children as young as two years (see Stolkind¹).

Tobacco has been definitely proven to cause peripheral vascular constriction. It is a reasonable assumption, though not proven, that it may cause coronary constriction also and thus predispose to coronary thrombosis. We do know that it may cause anginal pains. Acute rheumatic fever is known to cause changes in the electrocardiogram simulating

TABLE 1.

| <i>Authors</i> | <i>Cases</i> | <i>Male Ages</i> | <i>Sex not Stated</i> | <i>Female Ages</i> | <i>Total Reported</i> |
|---------------------------------|--------------|--|---------------------------|------------------------|---------------------------|
| Krumbaar & Crowell ----- | 1 | 38 | | | |
| Wearn ----- | 1 | | under 40 | | |
| Parkinson & Bedford ----- | 3 | | under 40 | | |
| Levine & Tranter ----- | 1 | 39 | | | 83 |
| Allan ----- | 1 | | 39 | | |
| Kerr, Larkey & Larsen ----- | 2 | | 32, 38 | | 15 |
| Osler ----- | 1 | | 35 | | |
| Klingman ----- | 1 | 35 | | | |
| Palmer ----- | 1 | | 36 | | |
| Nathanson ----- | 2 | | 32, between 30 & 39 | | |
| Jamison & Hauser ----- | 1 | 18 | | | |
| Clark ----- | 1 | 30 | | | |
| Dreschfeld ----- | 1 | | 12 | | |
| Benda ----- | 1 | | 12 | | |
| Werley ----- | 1 | 40 | | | |
| Smith & Bartels† ----- | 2 | 35, 36 | | | |
| Levine & Brown* ----- | 3 | 36, 39 | | 39 | 145 |
| White ----- | 21 | 22, 23, 26, 26, others 31-39 | | | 418 |
| Conner & Holt ----- | 20 | | 2 under 35 | | 287 |
| Leary ----- | 10 | 25, 26, 28, 31, 37, 37, 38, 38, 38 | | | |
| Barnes & Ball ----- | 2 | | under 40 | 34 | 49 (all autopsied) |
| Meakins & Eakin ----- | 7 | 6 males | | 1 female | 62 |
| Christian ----- | 5 | | 31-39 | | 71 |
| Lisa & Ring ----- | 3 | | 28, 30-39 | | 100 (all autopsied) |
| Coelho ----- | 1 | 34 | | | |
| Rathe ----- | 1 | | | 33 | |
| Marie ----- | 1 | | | 38 | |
| Boas & Donner* ----- | 7 | 31-40 all male | | | 71 |
| Riesman ----- | 1 | 32 | | | 88 |
| Sprague & Orgain ----- | 5 | 15, 15, 29 33, 39 | | | 61 (all autopsied) |
| May ----- | 4 | 19, 38, 39 | | 20 | 495 (all autopsied) |
| Wright-Smith ----- | 10 | 29 | 31-40 | | |
| Glendy, Levine & White ----- | 78 | | 8 under 30 | | |
| Durant ----- | 7 | 23, 31, 31 33, 33, 33, 35 | | | |
| White, Glendy & Gustafson ----- | 1 | | | 22 | 114 |
| | 208 | 71 | 130 | 7 | |

†Authors to here quoted by Smith & Bartels.
*Authors between asterisks quoted by White.

coronary thrombosis. Autopsies on some of these cases have shown coronary occlusion. However, no case of acute rheumatic fever has been included in our tabulated cases. It is extremely doubtful if a previous rheumatic fever or chorea is a predisposing factor in the early development of coronary thrombosis. Our patient was a heavy smoker, a heavy coffee drinker and a heavy eater. His work was of a kind requiring considerable nervous strain during a part of each month. In his family history there was evidence of defective tubing, as Osler called it, on each side. Glendy, Levine and White in their paper have compared the personal and family histories of their 100 cases of coronary disease under forty, with the histories of 300 persons living past 80. Their conclusions regarding the younger group are as follows: "The male sex is overwhelmingly the victim. . . . A greater number of such patients may be expected to have hearts that are normal in size, than among cases of coronary disease in general. There are fewer complications and diabetes or evident peripheral vascular disease is uncommon. The duration of life for those who died and the life expectancy of the survivors is greater than in coronary disease of all ages, but the susceptibility to sudden death is just as great. Inheritance and ancestral longevity are important factors in the occurrence of early coronary disease; racial factors are no doubt also of importance in view of the high incidence of Jewish people in our series of 100 patients. Urban life, sedentary occupations and habits, possibly excess of diet, the excessive use of tobacco, over-weight and increased nervous sensitivity and strain all appear to be more predominant in cases of early coronary disease than in those who have achieved long life. Alcohol and serious infections do not seem to play an important role."

Of the above mentioned factors, it seems to me that excess tobacco and food, lack of exercise and relaxation, mental strain and especially an inherited tendency to vascular disease are more important than the others. Let us learn to live wisely and try to

prevent the increasing occurrence of crippled coronary cardiac cases.

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ACUTE CORONARY THROMBOSIS.*

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Acute coronary thrombosis as we usually see it is an emergency condition which occurs at any time of the day or night and calls for a proper evaluation of the symptoms and signs in order to reduce mortality rate, which can be as high as 50 per cent and as low as 4 per cent depending upon the amount of heart involvement and reaction to the judicious use of treatment and nursing.

PATHOLOGY

Saphir¹ and his co-workers from their examination of post-mortem coronary thrombotic hearts showed that every heart had more than one occlusion or marked narrowing of the coronary arteries and that the left coronary artery was most frequently involved, with the most severe cases involving the descending branch with the occlusion taking 2 cm. from the mouth of the artery and usually at the bend of the artery.

These men found that infarction was most common in the apical region, sometimes the septum, less frequently the left posterior wall.

Occasionally there are cases of "silent attacks" in which the infarction is small, but give no clinical signs or symptoms of a pathological change.

They also demonstrate the fact that there may be an occlusion of a main branch of the coronary artery and still show no infarction of the myocardium, because of the collaterals of the coronary arteries, i.e., (1) Thebesian vessels; (2) Anastomoses between the vaso vasorum of the aorta and the coronary arteries; (3) Extracardiac coronary collateral circulation.

We mention these pathological changes in that they have a bearing on the discussions now prevalent concerning the diagnosis and treatment.

ETIOLOGY

The causative factors are the same as those seen in angina pectoris, with the exception that at least 50 per cent of cases of acute coronary thrombosis are preceded by attacks of angina pectoris and that approximately 66 per cent of cases give a history of hypertension.

*Read before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, Va., October 12-14, 1937. This paper and the preceding paper by Dr. Scott are discussed co-jointly.

†Formerly of Roanoke, Va.

Harrison² states that in coronary thrombosis the attack will come on, as a rule, during rest, due to the fact that the circulation is slow, thereby encouraging the formation of a clot within a vessel, while in angina pectoris the attacks come on with exertion due to a lack of oxygen to the myocardium.

CLINICAL PICTURE

Sampson and Eliaser³ point out that a diagnosis of an impending attack of acute coronary thrombosis can be made when a patient is seen before the thrombotic attack. These patients have a continuous prolonged pain which is usually preceded by exertion, does not occur during sleep, may subside suddenly and spontaneously without the use of opiates and is affected very little, if any, by nitroglycerine. The electrocardiograph will demonstrate no changes. These attacks will precede the major attack from one to twenty-one days, average seven days, and when recognized means that these patients can be put to bed and thus lower the mortality rate to as low as 5 per cent, because, with the gradual closure of the coronary artery, an opportunity is afforded for the collateral circulation to go into effect.

During the attack of acute coronary thrombosis the patient will look shocked, facies anxious, pallor of the skin, beads of perspiration oozing from the pores, skin cold and clammy, mucous membranes ashy gray. The patient is highly excited, restless and as a rule clutches at his chest because of the agonizing substernal pain.

TYPES OF ONSET

(1) Pain.—In a series of thirty-one cases Bruenn⁴ *et al* noted that 39 per cent had pain with their coronary attack. There may be a variation from slight pain to the typical acute, crushing, squeezing, agonizing sensation located around the sternum or epigastrium. This painful manifestation may radiate to the back, shoulders or arms and may last for hours or days.

(2) Respiratory.—Dyspnea may be the initial symptom and in its advanced stages orthopnea may occur. These attacks occur suddenly while sitting or reclining.

(3) Gastro-Intestinal.—We have a group, usually

middle aged, who start out with attacks of nausea and vomiting and having a tender abdomen.

(+) Harrison² makes a classification of:

(a) The phenomena of hypokinetic circulation (circulatory collapse).

(b) Manifestations of dyskinetic circulation (congestive heart failure).

(5) Silent Coronary Group.—The chief complaint is generalized weakness with no typical symptomatic complex, and may be overlooked, mistreated and be the cause of death.

PHYSICAL SIGNS

(1) Fever.—This will average 100° to 102° and in those with slight fever lasts three to seven days. In those patients in a state of shock one should take rectal temperatures, as oral temperatures may be normal and rectal temperatures may be high.

(2) Leucocytosis.—I mention leucocytosis after fever because both are a result of necrosis of the heart muscle. The average count runs from 11,000 to 15,000 and may appear as early as the sixth hour from the onset of the attack.

(3) Cardiac Findings.—Usually the heart sounds are weakened and sound distant with a diminution of the first sound at the apex.

Arrhythmias may develop, auricular fibrillation being the most common, and as a rule are transient in character.

Pericardial friction rub at the apex may be heard in a small percentage of cases when the anterior coronary artery is involved, and is heard about the end of the first week and is transient in character.

Conduction defects are usually seen with posterior infarctions.

The rate may be accelerated from 100 to 120 or, as a sign of failure, there may be a tic-tac rhythm. Bradycardia is occasionally seen in organic changes of the conduction system.

Murmurs occur usually with the progression of the disease. The most common murmur is a functional apical systolic murmur as a result of left ventricular dilatation. In hypertensive cases an aortic systolic murmur may be heard as a result of aortic dilatation. Basal murmurs are infrequent.

The blood pressure usually drops in acute coronary thrombosis with a fall of both the systolic and diastolic pressures. In shock⁵ there is a decreased cardiac output with the result that the systolic pressure may drop lower than the diastolic pressure and

as a result a decreased pulse pressure; this is seen with pulse pressures of 20 mm. or less.

Cyanosis may persist throughout convalescence, even though all signs of heart failure have disappeared and may be evidenced as a result of:

(a) Shock—Grayish pallor.

(b) Right Ventricular Failure—Dark bluish purple cyanosis.

(c) Shock and Heart Failure—Intense blue, symmetrical acrocyanosis.

(4) Nephritic Findings.—With the excessive outpouring of fluids through the skin and the decreased blood pressure oliguria occurs. With the care of the cardiac condition the kidneys will come back and need not be a cause of great concern.

A great many will show traces of sugar and acetone in the urine, albumin and casts; this is usually the result of shock and does not require any heroic diabetic or nephritic treatment, but will disappear as the patient improves.

(5) Embolic Phenomena.—When they occur they are either the result of mural thrombi that have formed in the left ventricle, causing cerebral manifestations, or when derived from the right ventricle, pulmonary manifestations.

ELECTROCARDIOGRAPH

Saphir¹ attributes the electrical changes that take place in the electrocardiogram as being due to the damage taking place in the heart muscle with the development of ischemia to the tissues and is not a result of the fibrous replacement of heart muscle tissue.

The serial⁶ changes that take place in the standard three leads are seen in 90 per cent of patients. When this routine shows normal Feinstein⁷ and Lieberman show that in lead four, when serially taken, will give a definite clue as to the diagnosis. These electrical changes may appear on the electrocardiogram within an hour or two with infarction or appear days later, usually between the fifth and tenth day. The coronary T-wave may resume its normal appearance within six weeks to twenty months after an attack occurs.

Barnes⁸ and Whitten classified the location of the infarcted area by the changes in the electrocardiogram; however, Gilchrist and Richie disagreed because of the results obtained in their post-mortem findings. A classification can be made as follows:

(a) Anterior infarction—involving the apex.

Lead 1—elevated S-T wave, with subsequent

inversion and coving of the T-wave and appearance of Q.

Lead 3—reciprocal change with depressed S-T wave.

Lead 4—absent Q-wave, upright coved T-wave.

(b) Posterior infarction—involving the base.

Lead 3—elevated S-T wave with subsequent inversion and coving of the T-wave and appearance⁹ of Q.

Lead 4—large⁷ Q-wave and T-wave is unusually deeply inverted.

(c) Lead 4—after the acute stages are over, Lead 4 may give information for months and years later as to previous coronary attacks, absence of Q-wave and upright T-wave is positive evidence of previous anterior infarction.

(d) Low ventricular complexes in some acute coronary cases.

(e) Large P-waves may be seen as a result of the load placed on the auricles in heart failure.

MEASUREMENTS OF CIRCULATION

Robb¹⁰ and Weiss describe the interrelation and significance of the circulatory tests, i.e., in failure of the left ventricle; the first sign is a diminished vital capacity, then a slowing of the blood flow and pulmonary congestion; this results in a prolonged arm-to-tongue circulation. With the involvement of the right ventricle, the venous pressure becomes elevated and finally the peripheral flow is slowed and the arm-to-lung time is increased. These tests are:

(1) Vital Capacity of Lungs—is an accurate measure particularly when it is below 60 per cent of normal.

(2) Arm to Tongue Time—

(a) Left ventricle function, using saccharine intravenously. The normal time averages twelve seconds; when eighteen seconds or more, it is indicative of slowing of circulation.

(b) Right ventricle function, using ether intravenously. Normal time averages six seconds; this is prolonged with slowing of venous return to the right ventricle.

(3) Venous Pressure—indication primarily of failure of the right ventricle, evidenced by distended neck veins. Venous manometer used (direct method). Pressure of nine cm. or higher abnormal.

These simple tests are cited as an accessory aid in the prognosis and treatment.

At this juncture I wish to give a short résumé of

three cases, all of the Jewish race, males, and average age fifty-one.

Case 1.—C.H.L.—Age forty-five. This patient had his attack July 20, 1933. While driving he had a sudden onset of agonizing pain in the mediastinal area. Pain traveled down both arms; he was dyspneic and cyanotic; pulse sixty; blood pressure 190/90. Was nauseated and vomited, temperature of 101; W.B.C. ran from 10,000 to 18,000 during the first week; he had an eosinophilia of 2 per cent. The cardiac sounds were diminished in intensity. This is a typical case which required a great deal of morphine to relieve pain. The first week, however, with the substitution of aminophyllin the pain was relieved and no narcotics were required. The patient remained in bed six weeks before he was allowed in a chair and when discharged the blood pressure stayed at 120/80. This patient is a leather goods salesman and is pursuing his normal occupation without any evident signs of a previous attack of coronary thrombosis. An electrocardiogram taken December 16, 1935, almost two and one-half years after his attack, shows a significant persistence of an increased take off of the S-T wave above the isoelectric line in Lead two. The low T-waves of Lead one and the high take off of S-T wave in Lead two are indicative of coronary disease.

Case 2.—M.B.—Age fifty-three. Seen April 10, 1935, and had an attack similar to Case one. Occurred while asleep. Had a history of hypertension 230/?; when seen blood pressure was 120/70. W.B.C. 15,280 and temperature 100.4° on the second day. He had a 3 per cent eosinophilia. This patient acted like a patient with gall-bladder colic; he was orthopneic, and deeply cyanosed. Massive doses of morphine to the point of toxicity had to be given to control his pain. His dyspnea and cyanosis was relieved by an oxygen tent; however, it did not relieve his pain. 20 per cent glucose (150 cc.) intravenously was given because of its caloric value. This patient improved with good nursing care while at the hospital, but through the insistence of the family and against my judgment was allowed to go home two weeks later. This patient was well on the road to recovery, but, due to ignorance and lack of co-operation, during the third week patient attempted to walk up a flight of stairs and collapsed, returning to the hospital the next day showing signs of cardiac decompensation with murmurs, systolic in time heard at the valve areas, and on the third day

a pericardial friction rub was noted. I could not get the family or patient to cooperate with me in my endeavor for enforced rest and quiet and requested that they use another doctor, which was done. Subsequently I heard that the patient finally developed into a cardio-renal case and died five months later.

Case 3.—H.T.—Age 53. Seen April 20, 1937, two days after his attack, in consultation with Dr. C. Long, in Johnson City, Tennessee. This patient had the typical coronary attack and attendant substernal pain, pain down left arm, was ashy gray, and had dyspnea and shock. The patient acted like an angina pectoris condition; however, he had a temperature 101.2° and a leucocytosis of 11,350. The heart sounds were diminished in intensity, and his blood pressure had dropped from 170/? to 90/60. A transient pericardial friction rub was present on the fifth day. This patient was treated with massive doses of morphine and oxygen, and on April 24, 1937, was given digitalis and adrenalin when he was in a state of complete circulatory collapse. The patient was kept on digitalis for two weeks and kept in bed for three months. My last information is that the patient is walking about.

The electrocardiograms taken on this patient show the S-T changes with the passing of the days:

(b) April 22, 1937—The S-T wave becomes higher in Leads one and two with a lowered voltage of the complexes.

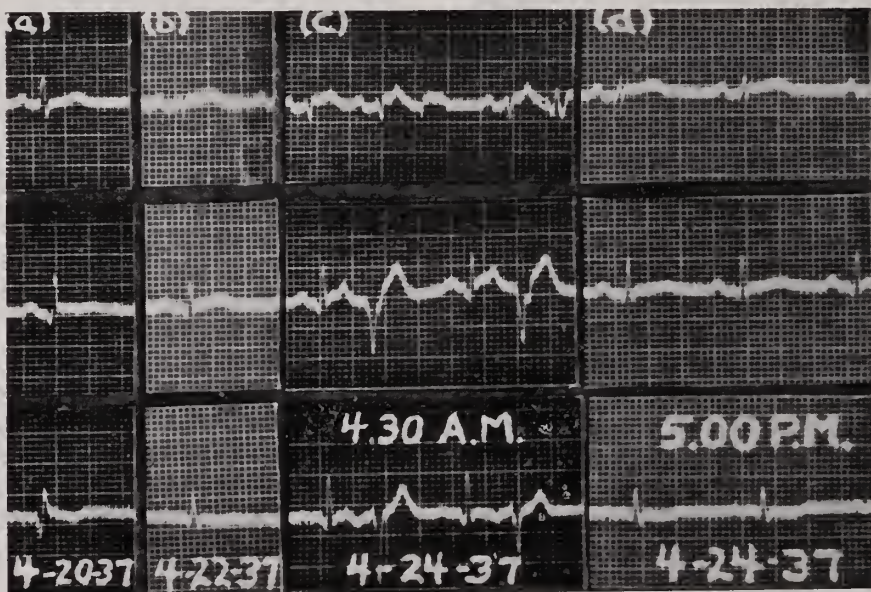
(c) April 24, 1937—4:30 A. M.—Patient in circulatory collapse. Electrocardiogram taken immediately after digitalis and adrenalin had been given hypodermically showed S-T take-off at its highest stage and definite coving of the T-wave in Lead one with ventricular extrasystoles in Leads two and three.

(d) Same day as (c) preceding, another electrocardiogram was taken at 5:00 P. M. The patient was on digitalis gr. iss. t.i.d. The patient shows a splendid response to digitalis in that the ventricular extrasystoles have disappeared, the rate and volume being regular and slower. The S-T wave elevation was evident in Leads one and two and depressed in Lead three. We could classify this as an anterior infarction.

In an analysis of these three cases one notes the evident similarity in the signs and symptoms and that a diagnosis can be made with a certainty.

PROGNOSIS

One has to be guarded in their prognosis because of the high mortality rate which is influenced by the following factors:



(a) April 20, 1937—Two days after the attack, there is slight elevation of the S-T wave above the base line in Lead two.

(1) In the first attack without heart failure Masters^{5, 11} *et al*, with a group of 140 cases, had gotten a mortality rate of 4 per cent, the mortality

rate jumped to 30 per cent with heart failure. With multiple attacks the mortality rate increased to as high as 65 per cent.

(2) Levine states that with a persistence of congestive heart failure through a period of weeks, the condition assumes a grave prognosis.

(3) Wood¹² and Wolferth mention that a posterior infarction has a better prognosis than anterior infarction and subsequent recovery is apt to be more rapid and more complete.

(4) Masters⁵ and his co-workers, in a study of their results, note the following:

(a) Prognosis is better with a slow pulse rate, and mortality is higher with a heart rate of 120 or more.

(b) With faint or poor heart sounds, failure was found in 4/5 of patients and mortality rate was 29 per cent.

(c) Those developing gallop rhythm had a grave prognosis, this being observed by Thompson¹³ and Levine.

(d) When the respiratory rate reached twenty-eight and above, the vital capacity was diminished and the incidence of fatal attacks rose.

(5) The blood picture will show the following:

(a) According to Masters, the prognosis is poor with a persistent leucocytosis and a 20,000 or 10,000 count does not alter the prognosis.

Contrary to this, White feels that the grade and duration of the leucocytosis is indicative of the size of the infarct and the prognosis.

Goodrich¹⁴ and Smith stated that (1) a rather high leucocyte count after occlusion was of serious significance. (2) A non-filament percentage curve above 30 per cent after the fourth day was indicative of a large area of infarction and poor prognosis. (3) A lack of eosinophiles or an eosinophile curve not rising above 1.5 per cent in the first ten days was of unfavorable import. (4) A non-filament percentage below 25 per cent and an eosinophile percentage rising above 3 per cent was suggestive of a less extensive infarct and favorable prognosis.

(b) Rabinowitz¹⁵ *et al* show that the sedimentation rate is most marked on the third to fifth day and will decrease with the improvement of the patient.

(c) Steinberg noted that with a persistent non-protein nitrogen or rise the prognosis was serious.

(6) The average¹⁶ duration of life is two years but those who have an uneventful recovery may live a normal life for many years. Therefore, the prognosis must be guarded and yet hopeful.

TREATMENT

In the treatment of this condition we must bear in mind that there is a variable change in the physical condition of these patients and at times it is extremely difficult to appraise the value of drugs used. With this in mind, we note these salient features:

(1) Rest.—It is agreed by all that absolute rest is imperative even though the diagnosis is questionable. As seen in Case two, the patient who leaves bed too early may develop congestive failure or may have a recurrence of an attack.

(2) Morphine is the most important drug. It should be given hypodermically for the relief of pain and the effect of lowering metabolic activity. Morphine should be given in large doses—to the point of toxicity—giving $\frac{1}{4}$ grain and if necessary repeating it in fifteen minutes to a half an hour, the dosage being dependant on pain and rate of respiration. Levine states that this is one condition that you need not be fearful of habit formation as these patients do not crave the drug following convalescence. Masters⁵ favors the use of dilaudid, claiming it is less constipating than morphine itself. Morphine should not be given with mercurial diuretics as it has an antagonistic action.

(3) Digitalis.—It is commonly agreed that the use of digitalis should be avoided as it may precipitate ventricular tachycardia, fibrillation or ventricular rupture. On the other hand, it is given in (a) circulatory collapse, as in Case three; (b) persistent auricular fibrillation, and (c) congestive failure.

(4) Quinidine.—Masters⁵ is against the use of quinidine because it is a protoplasmic poison and will cause harm to heart muscle even though it may stop arrhythmia or ventricular tachycardia. Contrary to this viewpoint, Kilgore¹⁷ prescribes quinidine gr. III t.i.d. as routine for two months to prevent ventricular and auricular fibrillation. Levine feels safe in giving the drug as a routine the first week as he feels that death if it occurs will be due to ventricular complexes. Contraindication to the drug he believes should be evidences of conduction block, i.e., heart block and ventricular block.

(5) Xanthine derivatives.—There are conflicting opinions concerning the use of the xanthine derivatives and the various vasodilators.

Wiggers¹⁸ and Green in their experimental work come to the conclusion that vasodilating drugs are of no benefit after complete coronary occlusion. Fow-

ler¹⁹ and his co-workers in their experimental work find value in the use of the xanthine derivatives.

Smith²⁰ *et al* feel that the good and bad results from the use of xanthine derivatives, i.e., theophyllin and theophyllin ethylenediamin are dependent upon whether the collateral circulation functions. Smith believes that the best results are obtained if used in the early stages of the occlusion in conjunction with other drugs. We might say that we feel aminophyllin was useful in Case one where the patient stated he had gotten relief of his pain, and in Case three there was no apparent value to the use of the drug.

(6) Oxygen therapy has its definite use in air hunger of dyspnea, cyanosis and pulmonary congestion. In some cases it may relieve pain.

(7) Glucose.—Marvin of Yale advocates the use of 50 cc. of 50 per cent solution in order to maintain the glucose content of muscle and to prevent nausea and vomiting. Levine believes that he gave pulmonary infarction to a patient as a result of a thrombosed vein due to glucose.

(8) Saline solution, 1000 cc. subcutaneously, may be given the first twenty-four hours to replace the great loss of fluids and salt through perspiration. It has its use also in cases of nausea, vomiting and oliguria.

(9) Caffein sodium benzoate may be given with those suffering with respiratory embarrassment, such as air hunger and dyspnea. It is best to give it in the hip intramuscularly rather than the arm as there will be less soreness to the patient.

(10) Adrenalin has its use in syncope, heart block or circulatory collapse. The drug is dangerous to use otherwise.

(11) Venesection is occasionally done in pulmonary edema, increased venous pressure or hypertension.

(12) Diet.—These patients should be placed on a low caloric diet, the purpose being to lower metabolic activity, decrease cardiac output, and decrease the pulse rate. Masters¹¹ and his co-workers have the following routine: (a) very little food should be given during the first few days; (b) fluids should be limited from 1000 to 1200 cc., providing they are not perspiring freely; (c) those having nausea and vomiting are given no food, cracked ice or charged water; (d) with improvement over a period of three to six weeks a diet of 750 to 850 calories balanced as follows: carbohydrate 100, protein 50, fat 20; (e) adequate vitamins and calcium.

(13) Bowels.—During the first two or three days it is best to leave the patient alone, the attendant fuss and strain being not good for them; after they have quieted down one can give an enema and a mild cathartic.

DON'TS IN TREATMENT

(1) Don't treat a syphilitic during these days; leave them alone. Samuel A. Levine insists that anti-luetic treatment should not begin until after the critical stage.

(2) Insulin should be avoided in diabetes as the work of the heart is increased 20 per cent when the blood sugar drops too low. They are treated by starvation, and insulin is only used in the critical cases with acidoses.

(3) Intravenous cholecystogram should not be done in coronary sclerosis or angina pectoris because an attack of coronary thrombosis can be precipitated. The dye should be given orally.

(4) No bathroom privileges should be allowed until well on the way to recovery.

SUMMARY

(1) The majority of patients survive their first attack by judicious treatment, i.e., rest, and the proper use of drugs.

(2) Those patients giving a previous history of hypertension and having a fall of blood pressure during the attack, will occasionally maintain the appearance of a normal pressure after the attack.

(3) A patient may have angina pectoris, then develop coronary thrombosis, recover, and have no further angina because of the removal of the offending vessel. Another group will get anginal attacks after recovery—to reappear on exertion.

(4) The greatest mortality is in the group that have multiple attacks and develop cardiac failure. These cases become the difficult ones and tax the ingenuity and medical skill of the attending physician.

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DISCUSSION†

†Discussion of the conjoint papers by Drs. Scott and Golston.

DR. B. P. SEWARD, Roanoke: Coronary thrombosis is a disease we formerly regarded as occurring in people above fifty years of age. During the last two or three years we have learned from a considerable number of reports in the literature that coronary thrombosis may occur in people under forty years of age. The refinements in diagnosis have enabled physicians to make the diagnosis in young people in many instances in which it otherwise would not be made.

Dr. Scott's paper is interesting because it shows careful study of his patient and also because it is among the first

if not the first report in Virginia of coronary thrombosis occurring in a young person. What may be the chief cause or causes of the apparently increasing incidence of coronary thrombosis in the age group from twenty-five to forty-five years of age, to which Dr. Scott referred, is largely speculative. A familial tendency appears to be well established; in fact, it appears to be the most important etiological factor, in the light of our present knowledge. The individual's habits and sedentary life seem to be a causal factor. Perhaps, also, as Levine suggested, there may be in some instances an unusual configuration of a coronary artery or of one of its branches, causing a section of that artery to be subjected to greater strain, with the result that it early undergoes degeneration. As the degenerative process increases, the walls of the artery become thicker, its lumen more narrow, and sooner or later a thrombus forms.

The life expectancy of young people who have had coronary thrombosis is an interesting question. According to Glendy, Levine, and White, the "duration of life for those who died and life expectancy in those who survived is greater than for coronary disease of all ages". They also stated in reporting a case one month ago that "recovery even after extensive infarcts is the rule in youth". If this is true, the outlook following an attack of coronary thrombosis in young people is more favorable than we formerly thought, for it was the consensus of opinion until very recently that the younger the patient the less is his chance for recovery. Such an opinion seems to have been based largely on the supposition that the collateral circulation in the myocardium improves with the passing of the years and the older the patient the better are the chances for the re-establishment of circulation in and around the area of infarction.

Whether we can do much to prevent the increasing incidence of coronary disease remains to be seen. I am rather skeptical about it. We may try to live prudently, but with so many demands made upon us, causing life to be more and more complicated and the environment often inharmonious, the question arises, how can we avoid much, if any, mental and physical strain? The increasing incidence of coronary disease is a high price we are paying for the advancement of civilization.

DR. E. G. SCOTT, Lynchburg: Dr. Golston has given us an excellent summary of our present knowledge concerning coronary thrombosis. There are just two or three points on which I wish to comment.

He spoke of the different types of onset of an attack. We should keep in mind that approximately half of the cases have no initial pain, the presenting symptom being sudden dyspnea, cardiac asthma or weakness. The three most important things for diagnosis in a suspected case are: A fall in blood pressure, the development of fever, and leucocytosis. No single sign is pathognomonic unless it be the electrocardiogram.

Dr. Golston stated that approximately 66 per cent of cases give a history of preceding hypertension. It is my impression that this figure is a little high. In Conner and Holt's series of 287 cases a previous hypertension was

noted in only 34 per cent. Apparently a normal blood pressure is no guarantee that there may not be arteriosclerosis of the coronary arteries.

It is interesting to observe the gradual rise in blood pressure following an attack of coronary thrombosis in patients with a previous hypertension. I have had a number of patients whom I have followed for months after an attack. Some of these have had repeated thrombotic attacks when the blood pressure had reached a mark close to its former level. I think the prognosis is worse in these cases than in those where the blood pressure remains at a lower level.

We have been warned not to use digitalis in coronary occlusion unless subsequent congestive failure develops. Cases have been reported in which anginal attacks developed during digitalis administration and ceased when the digitalis was stopped. Of course, during the acute phase of a coronary occlusion the objection to digitalis is that it may stimulate the heart and place additional strain on the weakened myocardium. However, I do not believe we use digitalis enough in our coronary cases after the acute phase is over. Several of my patients have had a persistent tachycardia and generalized weakness following the attack and have been remarkably benefited by taking digitalis.

No discussion of treatment is complete unless mention is made of Dr. Beck's operative efforts to improve the coronary circulation. This is still in the experimental stage but offers some promise of benefit to the chronic coronary cripple.

I am much more interested in the prevention than in the treatment of coronary thrombosis. Let us hope that future study will show us some definite means of preventing this terrifying accident that comes so often like a thief in the night when least expected.

DR. PAUL D. CAMP, Richmond: I enjoyed Dr. Scott's and Dr. Golston's papers. I should like to ask Dr. Scott if there was any history of previous hypertension in the case he reported in which the blood pressure went up afterwards. I presume that there was some hypertension previously.

As to the question of tobacco in angina or coronary occlusion, I do not think it has been proven very definitely at all that tobacco has anything to do with it. I personally do not smoke, so I am not prejudiced about it one way or the other, but I have never been able to find any real evidence that tobacco-smoking has anything to do with causing it. Some of these cases were Jewish people, and perhaps if they had a thrombo-angiitis obliterans (a mild state, possibly) the same process took place in the coronary arteries.

As to alcohol, as Dr. Golston said, it has not been proven that it has anything to do with producing coronary thrombosis and it might possibly have some effect in preventing it.

There is one fact that I do not believe was mentioned in connection with the increased incidence of coronary occlusion. I think the fact that more people are living to

the age when they get coronary occlusion may probably have something to do with the increase in this disease.

I did not quite get Dr. Golston's statement about Lead 4 and what percentage of cases Lead 4 will pick up that are normal in the three conventional leads. I guess by "circulatory collapse" Dr. Golston meant general collapse with heart failure. I do not believe digitalis does any good whatever in circulatory collapse but may do harm, although I think it does do good in congestive failure. As to xanthine derivatives, I believe Dr. Harry Gold reported that in myocardial infarctions produced experimentally in cats aminophyllin had no effect on the size of the infarct.

DR. DOUGLAS G. CHAPMAN, Richmond: There are certain pathological findings which are similar in a few cases of thrombo-angiitis obliterans, malignant hypertension, and coronary occlusion. Tobacco has been well established as a factor, and is believed by many to be an etiological one, in Buerger's disease. I believe there is much to be learned about the toxic symptoms and the pathology produced in the arterial system by tobacco. Ergotamine tartrate found in varying quantities in wheat, rye, corn and cereals may likewise prove to have an etiological role like tobacco in sensitive individuals, producing vascular spasm and arterial pathology. McGrath's experiments have proved that female rats are protected, possibly by the female hormones, from many of the arterial spastic phenomena. Tobacco smoking produces vasoconstriction of the vessels of the hands and feet, with a drop in temperature. In many cases it produces an increase in the pulse rate and blood pressure, slowing of the circulation, palpitation, breathlessness on slight exertion, and precordial or substernal pain. There may be tingling pain in the feet, and other signs and symptoms of anoxemia. If these experiments and clinical observations are correct, why should the vessels of the heart be excluded from a similar response?

DR. SCOTT, closing the discussion on his part: In reply to Dr. Camp's question, I do not know anything about the blood pressure of this patient before the attack. I believe, however, that it was elevated, because since the attack, it has risen gradually to 150/90.

Dr. Chapman has spoken of tobacco and told us the reasons why we believe it has some bearing. Dr. White advises all his patients to discontinue smoking. I know if I had an attack I would stop it. How do we know that some cases are not due to thrombo-angiitis obliterans, anyway? I should certainly advise patients to leave off smoking.

As to the statistics I quoted, they show very definitely that there is an increase in the lower age group—twenty-five to forty. This throws considerable doubt on the statement that the increase is due to people's living longer, because the increase has been found in the younger group.

DR. GOLSTON, closing the discussion on his part: I wish to thank Dr. Scott, Dr. Chapman and Dr. Camp for discussing my paper.

Dr. Scott mentioned that 66 per cent is a high percentage of cases having previous hypertension in acute coronary thrombosis. Those are not my own figures, and are quoted

from Saphir. I want to state, however, that in my limited group of acute coronary occlusion all these patients had hypertension, and with the attack the blood pressure dropped, and two out of three have maintained a normal blood pressure up to the present date.

The question of hypertension after the attack brings to my mind the thought Dr. Scott mentioned that this young individual had hypertension after the attack. There was a question in my mind if the rise in pressure was not a part of the pathological changes that attend a heart undergoing hypertrophy.

As to the question of tobacco I agree with Dr. Chapman. Harkavy has done quite a bit of work along this line and

in his experience there is a distinct vascular effect. Clendenen cites the case of a patient who was told not to smoke and was getting along very well. One day he felt particular good, smoked a cigar, and fifteen minutes later dropped dead.

You can get a diagnosis in 90 per cent with the usual three leads. The other 10 per cent, which are questionable, can be checked up with Lead 4. Of course, however, you cannot make the statement that by using the standard three leads and checking up with Lead 4 you will get a diagnosis in every case of coronary thrombosis.

I again want to thank the gentlemen.

TREATMENT OF BURNS IN THE HOME.

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There is no subject of more general interest and application than the treatment of burns. It is the domestic accident of great frequency, and will be confronted by the general practitioner in the course of his every day calls, far too many times, for it is the one surgical condition that almost without fail falls into the hand of the general practitioner and is seen by him first—at home or at the place of occurrence. Our personal interest in the subject has been stimulated by the number of cases seen in connection with industrial work during the past fifteen years, and the very satisfactory progress made in both shortening the period of disability and in lowering the mortality rate with the tannic acid therapy as compared with the other treatments as hitherto used by the general practitioner.

HISTORICAL

In 1815, Baron Boyer, in his work on surgery, wrote that there was no disease whose treatments accord less with theory. They were long treated empirically, and each practitioner boasted of success of particular remedies—one emollients, another astringents and repellents, but the curative indications of burns are to be drawn from the different degrees of the disease. His prime remedy consisted in soaks or compresses saturated with Goulard's water, which was it appears a solution of lead acetate in water. This evaluation of the empirical treatment could well have been written a century later, for no disease with the exception of poison oak ever enjoyed so many inefficacious remedies.

In 1925, Davidson reported the use of an aqueous

solution of tannic acid, as a spray or with compresses. Since then many other solutions have been proposed and tried with the idea of coagulating the damaged underlying tissues and fixing the toxic substances *in situ*, hence preventing absorption. Combinations of antiseptic chemicals and fixing solutions have been used with more or less degree of success.

CLASSIFICATION

For our purpose, a classification of burns with reference to the causative agent would seem rational. Any agent capable of producing heat will cause a burn, and readily falls under the head of physical, chemical and electrical, each with the three surgical degrees of severity.

1. Physical
 - a. Light ray, sunburn.
 - b. Mechanical, friction burns, chafing, etc.
 - c. Fire or any direct heat.
 - d. Scalding with hot water or steam.
2. Chemical
 - a. Acids, commercial acids, sulfuric, nitric, etc.
 - b. Alkalis, lye, caustic soda or potash, etc.
3. Electrical
 - a. Electric flash.
 - b. Cauterization, from contact with high voltage.
 - c. X-ray.

FIRST AID TREATMENT

The excruciating pain of the most trivial burn would prompt one to turn first to alleviating the intense suffering. Nothing soothes so quickly as morphine, which will help prevent shock. Keep the

areas of the burns free from contamination; they are clean, and infection arises from mistreatment. Until something can be done, cover them with sterile gauze. It is seldom the case, however, that the doctor arrives in time to prevent the goodly offices of a neighbor from applying her favorite grease or powder, sometimes both, leaving a potentially infected wound. Keep the patient well wrapped and avoid chilling; the complications of burns are more to be dreaded than the burn.

GENERAL TREATMENT

The general treatment consists in local care and systemic measures. It may be assumed that the patient is coated with grime and dirt, or the first aid has consisted of an ointment applied over the burn, all of which will have to be removed before other measures are instituted. Green soap as a general agent will prove worth while in getting off the dirt. All grease must be removed in order to apply the tannic acid successfully. Chemical burns should be washed with an antidote in weak solution or freely with running water, until all the chemical is dissipated.

Tannic acid in aqueous solutions varying from 2 to 10 per cent have been advocated. For sometime a 25 per cent solution in water has proved satisfactory, with exceptionally good results. This is applied with a spray gun at hourly intervals until the part is well tanned, and then every few hours until a coat of tannin is encrusted over the burn. When the new tissue is covered with skin the crust may be removed little by little. The deeper burned areas will probably have to be treated as small ulcers. The matter of adhesions, contractures and disabling scars will have to be constantly borne in mind and every bit of one's mechanical skill and ingenuity will likely be used in preventing their occurrence.

As stated before, the complications of burns are more serious than the burns, and every effort turned

to preventing their occurrence deservedly should have place in the systemic treatment. The measures to lessen pain, secure rest, and some comfort for the patient tend to thwart the dangers of shock. The maintenance of adequate body elimination by inducing the patient to take large quantities of fluid assist in the restoration of body functions. The kidneys should be carefully watched for blood and other signs of resulting derangement.

The common complications which give much trouble are pneumonia, toxemia, cellulitis, etc. No wary physician lets himself get caught with a complication if circumstances permit its avoidance.

The use and application of the coagulating therapy in burns has lowered the death rate. The old theory of mortal burns has been changed and the amount of body surface plays much less important part in the prognosis of every case.

CONCLUSIONS

1. Burns may be treated successfully in the home and the use of tannic acid therapy in some of its modifications will prove most efficacious in treatment.
2. The complications of burns are largely preventable and should constantly be borne in mind from the first, and treatment to that end should be employed.
3. The use of tannic acid therapy has materially lowered the death rate and reduced the period of disability in burn cases.

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HYPODERMIC USE OF ADRENALIN FOR DIFFERENTIAL DIAGNOSIS BETWEEN ACUTE PYLOROSPASM AND RUPTURED PEPTIC ULCER.*

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It is the desire of the writer to differentiate between acute pylorospasm and ruptured peptic ulcer by a therapeutic measure so simple that any physician can employ it to prevent unnecessary emergency laparotomy on his patients for ruptured ulcer when this condition does not exist.

Last year at Tarboro, N. C., we had the pleasure of hearing Dr. Charles W. Mayo talk upon gall-bladder disease and gallstone colic. In his talk Dr. Mayo stressed the fact that gallstone colic might be relieved by the use of nitrites. J. W. Hundley,¹ of Philadelphia, Pa., claims experiment has shown that this group of drugs exerts a dilating and relaxing action on the musculature of the bronchial tubes, and possibly a similar action on the muscle fibers of the bile ducts and the ureters directly and not by way of the autonomic nervous system.

In contrast to the direct action of the nitrites, adrenalin relaxes unstriated muscle fibers by stimulating the sympathetic nerves, the dilating action of which opposes the constricting action of the vagi. These two subdivisions of the autonomic nervous system in health maintain normal tonus in the circular passages such as the bile ducts, bronchial tubes, stomach, pylorus, and intestines. When in disease this normal balance is lost and the vagus gains ascendancy, spasm may occur in the muscles supplied by the vagus, and this spasm may be local or extensive in area.

Over-activity on the part of the vagus motor fibers may occur as a result of inflammatory stimuli which are picked up by its sensory fibers, transmitted to the vagal centers and relayed back down the motor fibers to produce spasm in the parts supplied by these same vagal motor fibers, as exemplified in gallstone colic, bronchospasm and pylorospasm. Endocrine disturbance may also produce imbalance in the autonomic nervous system.

Adrenalin is a normal stimulus to the sympathetic, and adrenalin by hypodermic injection stimu-

lates the sympathetic fibers to overcome and neutralize the dominant constricting action of the vagus and thereby to relieve spasm caused by an over-active vagus. This therapeutic action of adrenalin is employed for the relief of bronchospasm and can be used in other fields with valuable and sometimes spectacular results.

In *Annals of Surgery*, 1928, Page 669 was published an article by Dr. Charles H. Mayo,² entitled "Division of the Vagi for Pylorospasm," in which appeared the statement that some association, reflex in nature, exists between chronic appendicitis, diseases of the gall-bladder, spasm of the pylorus and peptic ulcers. Just what was the physiology involved was not known. It may be concluded that Dr. Mayo believed that spasm in the muscles of the stomach, pylorus and duodenum contributes to the formation of ulcer, because of his question, "may not the pyloric spasm precede the ulcer?"

To correct this condition Dr. Mayo described an operation devised by Payr, of Leipsig, which has been performed in this country by himself and by the late Dr. John B. Deaver. This operation divided the filaments of the vagus proximal to and providing nerve supply to the pylorus, thereby intercepting vagal nerve impulses which were producing pylorospasm.

In my paper, "Ileocecal Delay and Vagus Reflex as Etiologic Factors in Bronchial Asthma,"³ read before the District of Columbia Medical Society in November, 1920, and later before the Southern Medical Association in November, 1922, and, in my paper entitled "Etiology, Mechanism, and Treatment of Asthma",⁴ published in *American Medicine*, October, 1934, I described fully the reflex action through the vagus, caused by stimulation of the vagal fibers, which stimulation was incited by diseased conditions in the appendix, gall-bladder and other regions and resulted in reflex spasm of the bronchial tubes. Analogy was drawn between the nervous mechanism involved in bronchospasm, gallstone colic, and pylorospasm. Instead of at-

*Read before the forty-second annual meeting of the Seaboard Medical Association of Virginia and North Carolina at Virginia Beach, Va., December 7-9, 1937.

tempting to intercept irritating stimuli by severing vagus fibers, it was the writer's practice to correct or relieve the original source of the irritation, that is, remove the offending appendix or gall-bladder, correct conditions in their respective areas and also to treat all other portals offending the vagi.

Rivers, of Rochester, Minn., wrote as follows:⁵

"It is therefore conceivable that influences of neurogenic origin which seem capable of influencing periodic reactivation of ulcer, and which can prevent the healing of such lesions, and which at times produce an ulcer-like syndrome, may be of some importance in establishing a local chemical and spasmophilic gastroduodenal condition favorable to the development of ulcer. Somewhere within the mechanism which influences the sympathetic and para-sympathetic control of the upper part of the gastro-intestinal tract is a wealth of information which will need to be thoroughly understood before the final analysis of the condition of ulcer will be possible."

Gilson Colby Engel⁶ contributed the following statement:

"Reflex Pylorospasm.—This condition is represented by a group of cases with reflex spasm from the gall-bladder, appendix, kidney, etc. These cases deserve a thorough study to find the causative factor and then the removal of the cause. This treatment in itself usually will clear up the spastic pain without further care."

In this statement Engel suggested a solution of Rivers' expressed hope, which solution I had offered in 1920, in 1922,³ and, again in 1934,⁴ to relieve spasm resulting from vagal over-activity.

With full appreciation on my part of the action of adrenalin and of the neurophysiology involved in the mechanism of bronchospasm and pylorospasm, Dr. Charles W. Mayo's talk at Tarboro on the action of nitrites prompted me to report in this paper the hypodermic use of adrenalin employed for acute pylorospasm and to suggest it for gallstone colic. It has not been my good fortune to see a case of gallstone colic recently but I have had occasion to treat, within the past two years, five cases of very acute pylorospasm. You will not be bored by long case histories for the symptoms were very similar. Four of the patients were female and one male. All were suffering with intense agonizing pain in the epigastric region, sitting up in or on the edge of the bed. Examinations showed marked

tympany over the stomach, varying degrees of shock, fixed attitude and tremendous anxiety. The abdominal wall in each case was tense and the character of pain might easily have been confused with that caused by ruptured peptic ulcer, because of its severity, sudden onset and location. Tenseness of the abdomen differed from that of ruptured peptic ulcer, because of the fact that it was slightly more yielding to palpation and not of such rigid board-like nature as that caused by the latter condition. Five minims of 1-1000 solution of adrenalin were given by hypodermic in every case and this produced marked relief of the spasm in the females within five minutes. In the male three doses were required at five-minute intervals before the spasm began to subside. Only one case out of the five has had a recurring attack and this was in a young woman, aged thirty-four, first seen on September 24, 1937, who was completely relieved at the time but had a recurrence seventeen days later, on October 11, 1937, while waiting for me in my office, which attack required three injections. Under medical care she has gained nine pounds in weight and has correspondingly improved in general health.

Acute pain from peptic ulcer due to local reflex spasm in the muscle fibers underlying the ulcer might be relieved and perforation prevented by the hypodermic use of adrenalin.

It will be readily seen that, had any of these cases been perforations, adrenalin would have been of no avail.

The use of adrenalin was prompted by my appreciation of the similarity of the neurophysiology involved in spasm occurring in the digestive tract and of that in bronchospasm as referred to above, and its use involved no risk and caused no delay, had these cases been ruptured peptic ulcer.

In discussing Dr. Adams'⁷ paper, entitled "Factors in the Etiology of Peptic Ulcer", at the Tri-State meeting held at Norfolk last February, and published in *Southern Medicine and Surgery* of May, 1937, I emphasized the trophic effect upon the stomach wall produced by vagal stimulation predisposing etiologically to the formation of ulcer. Irritation resulting from prolonged spastic conditions might cause inflammation and contribute to formation of ulcer which, in turn, might further stimulate and irritate the vagus, thus maintaining spasm to continue a vicious cycle in the ulcer.

For intelligent treatment after the pylorospasm

has subsided, study must be made to determine factors which are disturbing the autonomic nervous system.

SUMMARY

1. Acute pylorospasm, because of similarity of acute symptoms to those of ruptured peptic ulcer, might mislead us into having our patients operated upon unnecessarily;

2. Acute pylorospasm can be relieved by one or more hypodermic injections of adrenalin 1-1000 at 5 minute intervals, 5 minims in each dose;

3. Loss of time is negligible and should ruptured ulcer exist no harm is done;

4. The physician who thus prevents unnecessary operation gains the gratitude of his patient;

5. This treatment may prove of value in relieving gallstone colic.

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INSULIN SHOCK TREATMENT OF DEMENTIA PRAECOX.*

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and

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Until quite recently dementia praecox, the dreaded adolescent disease, was considered a hopeless condition. Very little thought has been given to treatment but much time has been consumed diagnosing and classifying, and when this is finished, medical science discontinues its endeavors and the unfortunate victim becomes one of the 150,000 dementia praecox patients who are receiving custodial care in our state hospitals. At the present time many of our hospitals are enthusiastically treating dementia praecox by one of the several newly designed methods, namely, insulin shock treatment, camphor¹⁵ and metrazol.¹³ Insulin shock therapy, originated by Dr. Sakel of Vienna in 1933, is most widely used and has been used in this country for about eighteen months. Results have been encouraging—with remissions three or four times greater than can be expected from spontaneous remissions. No one can foretell the ultimate outcome of this therapeutic enthusiasm but certainly this general change in attitude toward dementia praecox should be a progressive step in the solution of this mystery of medicine.

*Read before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, Va., October 12-14, 1937.

The purpose of this paper is to better acquaint the physicians of the state with the insulin shock or hypoglycemic shock treatment of dementia praecox. Our information has, been derived from a review of the literature, a short period of observation at Bellevue Hospital, and the treatment of six cases. A description of the treatment, theories of the treatment and general results will be briefly considered, followed by our case reports.

The treatment consists of a progressive insulinization of the patient by the intramuscular administration of insulin in gradual increasing doses until the shock stage is reached. The patient is then allowed to have daily shocks with one day of rest weekly until satisfactory improvement occurs or the treatment is given up. In describing the *treatment*, Sakel divides the procedure into *four phases*.

Phase 1.—The *Introductory Phase* is started by giving the fasting patient 5-10 units of insulin between 7:00 and 8:00 A.M. The patient is kept in bed and four to five hours later is given sweetened orange juice. The mid-day meal follows and then the patient is allowed to carry on the usual hospital routine. The insulin is increased 5-10 units daily

until the shock dose is reached. During this period hypoglycemic manifestations occur with increasing severity. They consist of hunger, profuse perspiration, drowsiness, somnolence, increased flow of saliva, tremors and muscular twitchings.

In debilitated cases we feel it is best to start Phase 1 by giving small doses of insulin about two hours before each meal. The doses can be gradually increased and by so doing the patient's tolerance to insulin is discovered. Immediately the patient begins to gain weight, is less restless and shows general physical improvement. This method may be prolonged for two weeks if necessary before starting the early morning dose followed by the four to five hour fasting period.

Phase 2.—The *Shock Phase* is the most important stage in the treatment. This stage is assumed to have been reached when the dosage of insulin produces a degree of coma which no longer enables the patient to drink a sugar solution and tube feedings have to be resorted to. The shock dose of insulin varies; a few cases have had severe shocks on 20-30 units, while other cases require over 300 units for a severe shock, the average shock dose being 60 to 100 units. The coma, or true shock, comes on two to four hours after the injection. A patient is considered comatose when the corneal reflexes have gone and in very deep coma when the pupils fail to react to light. During the shock phase the normal reflexes disappear, the Babinski sign and ankle clonus become positive. Occasionally after a severe shock a hemiplegia or aphasia of a few hours' duration is observed. Some patients are very restless, throw themselves around in bed and require much care to prevent injuries. Many patients have muscular twitchings and myotonic attacks. Grand-mal epileptic convulsions are not uncommon and the treatment is terminated immediately after such an attack. Some feel that convulsions are a bad prognostic sign and others feel they are beneficial. Convulsions are more common in patients who do not perspire freely. The pulse is usually slow during shock and the temperature often drops several degrees due to the profuse perspiration. Blood sugar readings usually range between 40 to 0 during this stage but have no particular significance.

The second phase is terminated after a period of coma of one to two and one-half hours. The best method is the giving of 150 to 200 gms. of dextrose in fruit juice or water by means of a nasal tube.

We have found Karo syrup to be the most satisfactory form of sugar. One must be very careful that the tube goes to the stomach. If any fluid can be withdrawn, it should be tested with litmus and air should be blown into the stomach which can be heard entering the stomach with a stethoscope on the abdomen. Patients usually come out of shock ten to twenty minutes after the tube feeding. Some patients are very noisy and struggle considerably while coming out. Special indications for termination of shock are: Pulse above 120 or below 40, convulsions, impairment of respiration, laryngeal spasm and unusual pallor or cyanosis. If an emergency situation arises 1 cc. of adrenalin should be given hypodermically followed by 50 per cent glucose intravenously, and after this procedure the patient should drink a sugar solution or have it introduced with a tube.

Phase 3.—The *Rest Phase* is nothing more than the routine one day of rest each week on Sunday and any other additional days of rest that are deemed wise for the patient's welfare.

Phase 4.—*Stabilization Phase* is carried out by giving a smaller dose of insulin and interrupting the hypoglycemic period while the patient is able to drink the sugar solution. It is supposed to consolidate and stabilize the gains acquired during Phase 2. This phase is not considered important and very little time is used for it.

Practically all cases treated receive some beneficial results: Physical improvement and sedative effect, if nothing more. Many cases who do not have remissions become less disturbed, are easier to handle and are more sociable in the hospital. If the patient shows the most desirable response his progress will be as follows: At first he becomes lucid and exhibits normal behavior traits during hypoglycemia especially during the period immediately preceding coma. Later on the most marked improvement is noticed just after the termination of shock, and he may be symptom-free for a short period. The symptom-free period increases in length until the patient is symptom-free all day but may show some reactivation of old symptoms during hypoglycemia. This phenomenon is called "the reversal of reaction". As the patient improves more he shows fewer psychotic symptoms even during hypoglycemia. When this stage is reached the treatment is concluded after a few days of Phase 4 treatment. Some cases have been carried on for six months but the most suc-

cessful cases have been those who did not require more than four to six weeks of treatment for a complete remission.

The paranoid, catatonic and stuporous cases should be handled differently for best results. The paranoid case has the best prognosis and when improvement occurs it is progressive and orderly. Deep coma is best for these cases and the hypoglycemia should not be interrupted during the stage of activated psychosis. In catatonic cases it is wise to interrupt the hypoglycemia before actual coma is reached. In stuporous cases interruption during an activated state is desirable.

Any therapeutic procedure as severe as insulin shock treatment must be considered dangerous. However, the mortality has not been high; of the first 300 cases reported in Europe there were four deaths. Seventy cases have been treated in Bellevue Hospital with no mortalities. The patient runs a risk as in a surgical operation, and as in a surgical operation the possible gains over-shadow the dangers. The patient must have careful nursing care during the treatment. After-shock may occur as late as twelve hours after treatment and if it occurs the nurse should be able to recognize it and treat it by giving the patient a sweetened drink. The heart must be kept in mind, but so far no serious heart complications have been reported. Aspiration of saliva resulting in aspiration pneumonia is one of the most dangerous complications. The patient should be kept on his side with head placed so that the saliva will run out of the mouth. Atropine is indicated in some cases. Extreme care should be exercised during the tube feedings.

The universal question on hearing of insulin shock therapy for the first time is, what is the rationale of the treatment; why and how does it work? No one can answer this question, but several of the theories will be mentioned: (1) Sakel favors the following theory, briefly stated: Insulin inhibits that which is functioning, meaning the psychosis, and activates that which is latent, meaning normality. (2) The shock theory: Sakel says, "Perhaps through the elementary convulsion of the cell, almost amounting to its destruction, every conduction-path not yet firmly fixed may be destroyed and on recovery the original normal conduction-paths predominate and can easily be polarized in the normal direction through further treatment." Professor Berze¹⁶ says, "Probably nothing more is concerned than psychic

trauma or emotional shock bound up with insulin treatment." This shock theory can not be applied to all cases because some cases show definite improvement before a stage of shock is reached. (3) Metabolic theories: Sakel speaks of a detoxicating effect on the body as a whole by influencing the basal metabolism. Several workers have suggested that insulin therapy improves the nutrition of the brain because of its stimulating effect on carbohydrate utilization and since it is known that brain tissue is directly and exclusively dependent on carbohydrates for nutrition.

TABLE No. 1

Clinical Results of Insulin Therapy in Dementia Praecox.

| Source | No. Cases | Full Remission | Improved |
|--------------------------------|-----------|----------------|----------|
| Vienna (Sakel) ----- | 104 | 45% | 21% |
| Switzerland (Muller) 70 | 70 | 50% | 27% |
| New York State Hospitals ----- | 89 | 32% | 41% |
| Bellevue Hospital----- | 30 | 37% | 33% |

As a small percentage (5-25 per cent) of cases of dementia praecox are known to undergo spontaneous recovery, it is somewhat difficult to evaluate the results of treatment. However, the results achieved by insulin shock far exceed any that might be expected to recover spontaneously.

Table No. 1 is a summary of reported results in 293 finished cases. "Full remission" means no symptoms, full insight and able to work. Under the "improved" heading is included patients who are at home and working, but not entirely well; and cases who are improved but still require hospitalization.

The results as tabulated in the above table include old and new cases. Of Sakel's new cases, i.e., those who have been sick less than six months, he reports 70 per cent in full remission and 16 per cent improved. His old cases, or those sick for a period of six months or more, he reports 20 per cent in full remission and 45 per cent improved. Muller's results are approximately the same as Sakel's when sub-divided into new and old cases. The New York State Hospitals report includes only old cases who offered a poor prognosis with little hope of spontaneous recovery. A number of the Bellevue patients were new cases.

From all reports, we can safely conclude that from 60-70 per cent of the cases of dementia praecox under six months' duration have responded to insulin therapy with full remissions. Very few full

remissions have been obtained in patients who have been sick over one and one-half years.

The remissions have been fairly stable. At the end of Sakel's first two years of work, he had fifteen remissions lasting over one year, and thirty-four over six months. There were eleven relapses, five of which were again treated and with good results in three cases. Some of the Bellevue cases have been at home for six months with no relapses. Sufficient time has not elapsed to make a statement as to the permanence of the results.

The improvement was continuous and progressive. Two weeks after beginning the treatment, the family considered him normal from the mental standpoint. He gained complete insight into his condition and gave a very remarkable account of his illness with full explanation of his psychotic actions. During the treatment he gained thirty pounds in weight. He was discharged from the hospital July 1 and resumed his duties as foreman in a textile plant, which position he has held for the past three months. He is considered perfectly well.

TABLE NO. 2

Clinical Resumé of Insulin Shock Cases.

| Case | Type | Duration | Shocks | Dose | Results | Remarks |
|------|--------------------|----------|--------|-------|------------|-------------------------|
| 1. | Deteriorated ----- | 6 yrs. | 16 | 40 U | Unimproved | In State hospital. |
| 2. | Paranoid ----- | 4 mo. | 12 | 50 U | Well | At home 3½ mo. at work. |
| 3. | Hebephrenic ----- | 1 yr. | 20 | 55 U | Unimproved | Marked physical gain. |
| 4. | Paranoid ----- | 2 yrs. | 12 | 70 U | Improved | At home 2½ mo. at work. |
| 5. | Hebephrenic ----- | 2 yrs. | 16 | 40 U | Improved | Still under treatment. |
| 6. | Hebephrenic ----- | 4 mo. | 20 | 100 U | Improved | Still under treatment. |

CASE HISTORIES

Case 1.—This patient, a woman, aged thirty-one, began showing symptoms of dementia praecox six years ago and has had institutional care for four years. She has shown progressive mental deterioration. The insulin shock therapy was started April 6, 1937, at the request of the family. She had sixteen moderately severe shocks with the injection of forty units of insulin. We did not notice any beneficial effects, either physical or mental. She is the only case in our series that has not shown some response to insulin therapy.

Case 2.—Patient, man, aged twenty-nine became restless and was unable to concentrate on his work in February, 1937. The nervous state gradually progressed and on March 30 he had to be transferred to a state hospital. He felt that he should save the world and that he was being persecuted. He endeavored to carry out the commands of imaginary voices and in doing so was frequently extremely violent. A diagnosis of dementia praecox, paranoid type, was made at that time, which was later confirmed by an independent examiner, prior to his admission to the hospital May 23. At this time he was a very dangerous patient, both to himself and to others. Insulin shock was started May 28 and completed June 28. After six days of treatment, before the shocks developed, he began to improve and to gain some insight into his condition. He received twelve wet shocks on fifty units of insulin.

Case 3.—Patient, girl, age eighteen, had suffered from a mental illness for one year prior to her admission May, 1937. During this time she had been seclusive and refused all foods except fluids. She was brought to the hospital by ambulance because of irrational behavior, silly delusions and self-imposed starvation of three weeks' duration. At that time she was in a stuporous state, arousing at intervals to talk of her delusions in an excited manner. She showed marked mental regression, was untidy and had to be tube fed. She had lost forty-five pounds during the last year, weighing seventy-one pounds on admission. Insulin shock therapy was begun June 9 and completed July 23. During this time she had twenty shocks with fifty-five units of insulin. The patient had several grand-mal convulsions during the shocks. After a few days of treatment she began to eat and gained rapidly in weight. Marked mental improvement was noted after six or seven shocks. The improvement was not continuous or progressive but at one time she was well enough to act as hostess at a hospital tea. For a week prior to discharge, she was communicative, interested in her appearance and enjoyed walking on the grounds with a nurse. She never realized her true condition. She gained sixteen pounds during the treatment. After a few days at home, she became worse and was taken to a state hospital. It is probable that her recovery might have been permanent had she received adequate treatment. The

response of this patient to insulin shock was definite physical improvement with frequent periods of approaching-normal mental functioning.

Case 4.—This patient, a woman, aged forty-five, had been suspicious of her husband and neighbors for several years. For about one year before admission she had made life almost unbearable for her husband, accusing him of unfaithfulness, believing her minister and other good friends were making remarks detrimental to her character. She felt that others were in sympathy with her husband and against her. Her husband brought her to the hospital because her increasing delusional state made it impossible to keep her in the home longer. She was in the hospital six weeks before insulin treatment was begun. During this time she became gradually worse, involving the hospital personnel in her delusional pattern. Before the shock stage was reached, a general sedative effect was noticed. The shock dose was seventy units and she received twelve wet shocks without reaching the stage of true coma. It was noted that in the afternoons following the shocks, she was quite sociable and open in her conversation and did not discuss her various delusions. She was happy, slept well and had a normal interest in life. After reduction of insulin, in the fourth stage, her old symptoms reappeared in a mild form. She has been at home for the past two months and has been able to care for her home. Although she cannot be considered well, she is much better than before receiving the treatment. We feel that a longer course of treatment and deeper shocks would be beneficial in her case and likely result in a complete recovery.

Case 5.—Patient, man, aged twenty-one, has not been well for two years. His first symptoms were associated with his stomach and later a feeling of depression, indifference and restlessness. In June, 1937, he became so restless and so peculiar in his behavior that he was sent to a state hospital. He was admitted July 10 and at that time was quite restless, perplexed, preoccupied, apathetic, grimaced and had many mannerisms. He was too preoccupied to converse. He had lost fifteen pounds in weight. During the first two weeks in the hospital he showed no improvement. Insulin therapy was started and he began to improve immediately. He developed a hearty appetite, was less restless and began sleeping without sedatives. We gave him sixteen moderately

severe shocks which required forty-five units of insulin. After the sixth shock and until his discharge two weeks later, he showed no abnormal behavior and was fairly sociable. He had normal interests and conversed intelligently and showed very little preoccupation. There was a gain of fifteen pounds in weight. He did not, however, develop insight into his condition. After the sixteenth shock he was sent home for a trial and remained in his improved state for three or four days. He did not maintain his improvement and has returned for additional insulin shock therapy.

Case 6.—This patient, a boy, aged sixteen years, has been physically weak and a problem child all his life. An examination by Dr. Howard R. Masters, three years ago, showed "a schizophrenic personality". Definite psychotic symptoms were first noted in May, 1937, at which time he injected household ammonia under the skin of his left arm with suicidal intent. In a few weeks he refused to talk or eat and was sent to a state hospital. He was in the state hospital for three months during which time he became untidy, was mute, and had to be forced fed. These symptoms were verified by our study of his case for one week before starting insulin therapy. Four days after beginning insulin, he began feeding himself and in a few days he talked, associated with other patients and became tidy. All these changes occurred before a shock dose was reached. He has received twenty shocks thus far on 100 units of insulin each morning. He is showing evidence of a gradual integration of personality. He has gained ten pounds in weight. We do not anticipate a full recovery in this case as the patient is a defective boy mentally and physically. It is likely that the improvement will be sufficient for him to be cared for at home. He is still under treatment.

CONCLUSIONS

We are convinced that there is a definite relationship between improvement of dementia praecox patients and the insulin shock treatment. One must witness the marked change these patients undergo before fully appreciating the value of this treatment. It is without question the best available therapy at this time.

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DISCUSSION

DR. D. C. WILSON, Charlottesville: Dr. Strickler presented a splendid paper and his discussion of his cases is very clear and well done. Insulin treatment of dementia praecox is still in the beginning stage. At the present time the New York State Mental Hospitals have taken over this therapy and are going to use it on a great many patients in their efforts to try out its value. Certainly if these people have remissions as long as six months to a year, the treatment will be worth doing. At the present time at the University Hospital we have several cases under insulin shock therapy and they have improved. We also now are using metrazol to produce convulsions and with these we have had more success than with the insulin. I was struck by the fact that Dr. Strickler claimed shock reactions with relatively small doses. Usually we have had to give as high as 100 to 125 units to obtain shock. I have noticed in some of the cases from up north that they have used as much as 450 units of insulin in one day. We still do not know which cases should be treated and whether a patient with a poor pre-psychotic history should be treated with insulin shock or not. It has been claimed by some that some individuals treated are better than they ever were. There is some possibility of improving people who have been mentally sick for a long time without its being recognized. We have yet a great deal to learn but undoubtedly Dr. Strickler has gone ahead with his work in a well-controlled style. Certainly we must be careful with our conclusions and very careful in our treatment of these people so that we do not do more harm than we do good. Certainly it is a form of therapy to be used in institutions and to be carried out by people who are trained and careful in their work.

DR. ASA SHIELD, Richmond: Insulin treatment has been used long enough to say that this contribution of Dr. Sakel's in 1933 is now generally recognized as the most effective therapy in the treatment of dementia praecox. As our State society is essentially one of practicing clinicians, it is interesting that this very important therapy is the contribution of a clinician who observed that disturbed personalities in morphine withdrawal and certain psychotic manifestations were quieted following insulin therapy and that some of the psychotics seemed to go more quickly into remissions following this therapy.

Dr. Sakel's original cases were very carefully checked and the diagnosis was confirmed by his chief, Dr. Potzol. In Vienna the criterion for making the diagnosis of dementia praecox was more in line with the Kraepelin school, so I think it is fair to assume that the more malignant dementia praecox cases were treated there than in some places where the diagnosis of dementia praecox is a label used for a broader group of personality disturbances.

It is of interest that when this work was first being done and reported, Dr. Joseph Wortis, of New York, was in Vienna, at which time he translated one of Sakel's reports and sent it to various medical journals in America; it was a long time before this report was published.

We may ask, what can we expect from insulin therapy? It is generally accepted that about 30 per cent of the first admissions of dementia praecox return home. With insulin

therapy various conservative clinics have reported that 70 to 79 per cent of the cases who had been ill for only a few months recovered sufficiently to return home. This is very much in line with Dr. Strickler's observation that a patient who had been ill for four months got the best results and this is confirmatory of our general feeling that it is advantageous to get these patients early, as the outlook for remissions (that is all we can say at this time) is better in these cases.

The convulsive therapy as first reported in 1934 by Meduna, of Budapest, has recently been reported in a monograph, with results as favorable in cases of dementia praecox of only four or five years' duration. Insulin therapy has given a few favorable reports in cases with longer duration, which has surprised Dr. Sakel and others.

Dr. Wilson stated in his discussion that he preferred to have his patients in shock about four hours. In the observation of my own cases and those I saw in other clinics two hours was considered the maximum shock period. In all of my cases except one that went into an irreversible coma the termination of the insulin stupor has depended on, first, the clinical manifestation of the illness in association with the manifestation and the stupor when there were no untoward signs developing such as collapse, low temperatures, and profound muscular rigidity with convulsions.

We have been impressed with the fact that our patients who have convulsions seem to respond to therapy better, and, contrary to what some of the discussions seem to indicate, we rather like to see them as long as the convulsions are not associated with any complications.

It is of further interest to note in reports of institutions where a large number of cases have been treated that the results seem to be consistently more effective; thus, I think this is a therapy that in proper hands offers some-

thing of real value, whether temporary or not, to both the patient and the family of those who have dementia praecox.

DR. REX BLANKINSHIP, Richmond: My experience with insulin therapy has been rather limited but to me it has been just about as shocking as it has been to the patients. I have had some dramatic reactions and have felt very discouraged by the results I have had in my two cases. Of course, that is a very small number of cases but there were not any encouraging features at all.

Last year at the American Psychiatric meeting in Pittsburgh, I was very much amazed to see the enthusiasm that all the older men had for this treatment. I felt much, as Dr. Shield did, that perhaps it was a reaction to the psychoanalytical advocates.

Last fall, while visiting in New York at the Hudson River State Hospital, where they were at that time running a series of insulin shock cases, they also reported some controls. These controls were given practically the same treatment, care and attention, but no insulin was given. It seems quite definite that there must be some psychological reaction in these patients due to the increased attention received during treatment.

I enjoyed Dr. Strickler's and Dr. King's paper very much.

DR. STRICKLER, closing the discussion: I enjoyed the discussion very much and wish to thank the gentlemen for discussing the paper.

Dr. Blankinship remarked about the controls. I have not read the article he referred to, but I have read some reports along that line. I know it has been said that increased attention might be the explanation. One writer, while doing experimental work with a group of dementia praecox patients, did not feel that the extra attention given them resulted in any definite improvement.

ACUTE HEAD INJURIES—WITH PARTICULAR REFERENCE TO TEMPERATURE, PULSE AND RESPIRATION CURVES.*

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The diagnosis and treatment of acute head injuries has become an increasingly important problem in modern surgical practice. These injuries may be classed as surgical emergencies and they are of interest not only to the specialist in neurologic surgery but to every practitioner of medicine and surgery. Their number is increasing yearly, due to the steady advance in the number of vehicular accidents. Finally, they command our attention because there still exists considerable difference of surgical opinion

concerning the proper procedures to follow in the diagnosis and treatment of such injuries.

The advent of modern collision forces has produced more diffuse and more formidable injuries to cerebral tissue than we have routinely experienced heretofore. Such injuries have rightly emphasized the intracranial disturbance and such a phrase as "fracture of the skull" should be discarded from our surgical thinking. Acute head injuries threaten the preservation of life and only in rare instances does an appreciation of the integrity of the skull influence our treatment. The presence of foreign bodies or the clinical impression of a depressed fracture ob-

*Read before the Lynchburg Academy of Medicine, December 6, 1937.

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viously demand roentgenographic study. We are interested in the question of fracture lines crossing the paranasal sinuses, the mastoid cells, or the region of the middle meningeal artery. It must also be remembered that the presentation of a skull roentgenogram in a court of law sometimes carries much more weight than any assertion by a surgeon concerning the degree of intracranial injury. Except in exceptional circumstances, however, immediate roentgenographic study of the skull is not indicated in acute head injuries where every unnecessary manipulation is contraindicated.

Throughout the history of surgery, we can find enthusiastic individuals advocating some type of specific routine in the diagnosis and treatment of acute head injuries. Early in the nineteenth century, for instance, Percival Pott trephined all head injuries and he would frequently follow a linear fracture line across the skull with as many as twenty trephine openings. Indeed, a member of the royal family gave him a testimonial as a tribute to his dexterity. And at the same time, Charles Bell, of Bell's palsy fame, advised non-intervention, nursing care and like conservative measures. Similar differences of opinion are present among members of our modern surgical family. Early in the present century, subtemporal decompression was introduced in the therapy of head injuries¹ and the resultant mortality of ill-chosen operations was appalling. Following the work of Weed and McKibben², who showed that intracranial pressure could be reduced with the introduction of hypertonic glucose solution, it was not long before we found such therapy well established in the clinic³. This was soon followed by the dehydration or restriction of fluid type of therapy⁴. The so-called medical treatment of head injuries was rounded out by the application of lumbar drainage through repeated lumbar puncture⁵. Study of hypertonic glucose therapy disclosed the fact that following the initial fall in pressure⁶, there was often a delayed rise in pressure greater than that existing previously, probably due to the irritative effect of the solution upon cerebral tissue. Sucrose in the same percentage solution has been found to be a more satisfactory substance, lacking any irritative effect⁷.

I have emphasised these therapeutic measures that exist today in order to demonstrate the belief that the therapy of head injuries has become more active and that this activity has shown a tendency to fall

into a definite routine. Head injuries are being treated as a group rather than as individual problems which they actually are.

To retrace our steps a bit, how are the more diffuse head injuries diagnosed? It is obvious that individuals with local destruction of skull and cerebral tissue, and those with focal neurologic deficit offer little difficulty. But in this group, and in those individuals with more diffuse injuries, we wish to know how much intracranial pressure exists and we wish to follow the fluctuation of that pressure. There has been and is a growing tendency to use spinal puncture with study of the spinal fluid and direct measurement of the subarachnoid pressure as agents for the estimation of the extent of injury. There are three obvious disadvantages to this procedure. Quantitative study of the red blood cell content of the spinal fluid bears no clear-cut relationship to the severity of the cerebral injury. Accurate spinal fluid dynamic studies are extraordinarily difficult to obtain upon many patients, especially those who are restless or disoriented. In the third place, spinal puncture, even if carefully done, may give further room for hemorrhage if bleeding from an extradural, subdural or basilar source be present. In patients with acute subdural hygroma, no information of value may be obtained from lumbar puncture.

In our differential diagnosis we must place, on one side, cerebral edema of varied degree, and, on the other side, space consuming lesions such as extradural hematoma, acute subdural hematoma and acute subdural hygroma. All have in common the factor of increased intracranial pressure. Our problem, reduced to the simplest formula, is to recognize and evaluate the amount of increased intracranial pressure and then to rule out the above individual syndromes that demand so-called radical or operative intervention to preserve life. The remainder may then be treated with the so-called conservative methods, i. e., intravenous sucrose, dehydration, and spinal drainage, followed by subtemporal decompression if necessary. Many of these will need no treatment although dehydrating methods may reduce subjective discomfort.

How may we answer the first part of the problem outlined above? Of paramount importance is the state of consciousness of the individual patient. A definite march of the state of consciousness may be observed in individuals with increasing intracranial pressure. One observes first drowsiness from which

the patient may be easily aroused. This early dulling of the sensorium may be marked by the onset of involuntary micturition or defecation. As pressure increases restlessness may appear with periods of alternating hyperactivity and semicoma. This phenomenon is of serious portent. The periods of semicoma may rapidly increase in length until full coma is established. Very often this march in the state of consciousness is reversed as patients recover following relief of intracranial pressure. Individuals may at once enter any of the above states of consciousness following head trauma and our observations must be directed toward the recognition of what might be termed adjacent states of consciousness. Unless we know that intracranial pressure has been relieved or is receding, all medication is contraindicated for fear of concealing these important diagnostic signposts.

There are three important clinical observations, namely, those relating to the temperature, pulse and respiration curves, that, with the state of consciousness, will answer the first part of our problem in every case. It has been taught for many years that a bradycardia represents a state of compensated intracranial pressure, that a break in this bradycardia, an irregular pulse, a rise in temperature and a high or falling blood pressure represents an impending collapse of an individual's resistance to intracranial pressure. It is not quite as simple as this but published studies of 300 cases⁸ and unpublished studies of a similar number of more recent cases have suggested that these clinical observations may form the basis for a valid estimation of the degree of intracranial pressure.

The study of such clinical charts is based on the fact that trauma to the brain results in the same sequelae as elsewhere, namely, edema and hemorrhage, with or without local destruction of tissue. When the brain, in its enclosed, rigid skull, can no longer compensate for an increase in volume, by decrease in the vascular bed and the ventricular space, the medullary centers are affected. Such effects are reflected in temperature, pulse and respiration charts.

It has been stated as a general principle, and correctly so, that 70-75 per cent of acute head injuries will survive, with or without treatment; that 15-20 per cent will need some type of intervention to preserve life, and that 10-15 per cent will succumb to the injury no matter what treatment is instituted.

Individuals in this first, and numerically the largest group, show a clinical chart that has been previously described as Type I.⁸ It is characterized by an initial loss of consciousness, followed by a return to complete consciousness or a varying period of drowsiness. The temperature curve, after an early drop or after starting from a normal level, shows a mild hyperpyrexia to 101 degrees rectally and a slow, regular decline to normal within from twenty-four to sixty hours. The curve for the pulse rate closely follows the temperature curve, rising steadily with it after an initial irregularity and falling to normal in the same length of time. The respirations are normal, or during the period in which the temperature rises, they may show a slight but regular retardation. The patients in this group fall into that class that has been termed "cerebral concussion". It is obvious that the surgeon has no active part to play in these injuries except that of closely observing the clinical course and possibly treating local scalp lacerations or reconstructing a depressed skull. The compensatory mechanism of the brain is able to control the mild degree of intracranial pressure. Late in the course of the injury, subjective symptoms may safely be relieved by dehydration methods.

Acute head injuries that fall into the next two groups by virtue of a state of consciousness and representative charts for the temperature, pulse and respiration curves are the most interesting and the most amenable to surgical intervention when the natural defenses of the body collapse. The initial loss of consciousness is more profound and more prolonged. Throughout the course of the injury, there is a more extensive loss of consciousness, varying from drowsiness to restlessness and periods of hyperactivity contrasting with semicoma. Most characteristic of this type is an initial bradycardia, with a persistent, moderate rise in temperature. The slow, heavy, pounding pulse may develop late, from an extradural hematoma for instance. Such a bradycardia is a potentially dangerous manifestation and is not necessarily evidence of compensation. The respiratory rate tends to become more irregular. The third group, or type, presents the same picture in a more aggravated form. The temperature is high and unremitting, there is a relative bradycardia and the respirations show a tendency to become Cheyne-Stokes in character.

The fourth type includes those acute head injuries of such a degree that no procedure is successful in

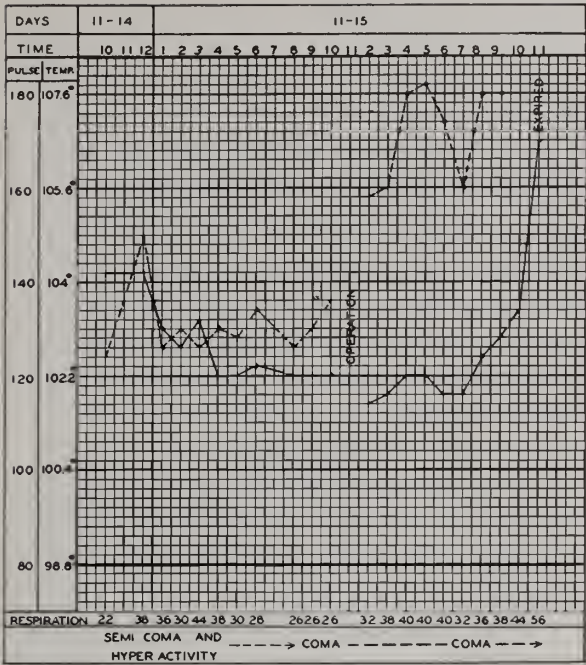


FIG. 3. CLINICAL CHART OF TYPE III INJURY, UNRELIEVED BY SUBTEMPORAL DECOMPRESSION AND DEHYDRATION

compensate” and die without any further change in their clinical charts. As signs of decompensation, we would watch for—1, deepening of the state of consciousness; 2, deepening or the slightest irregularity

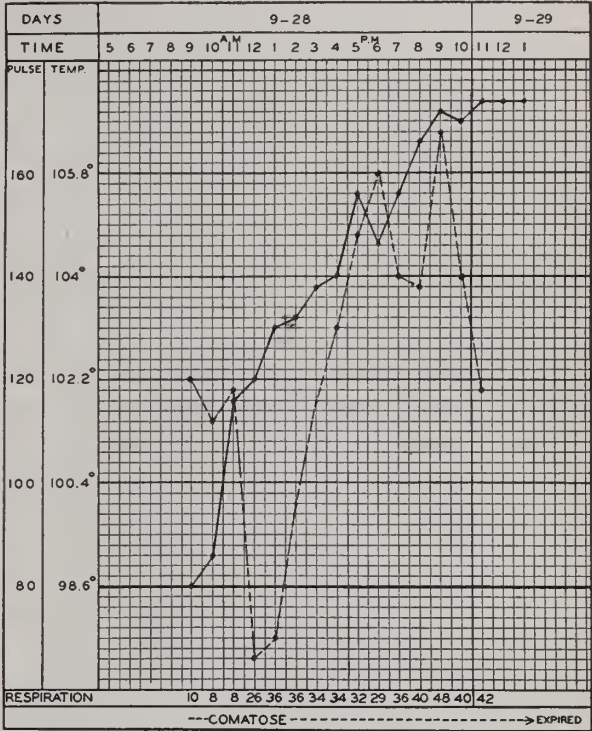
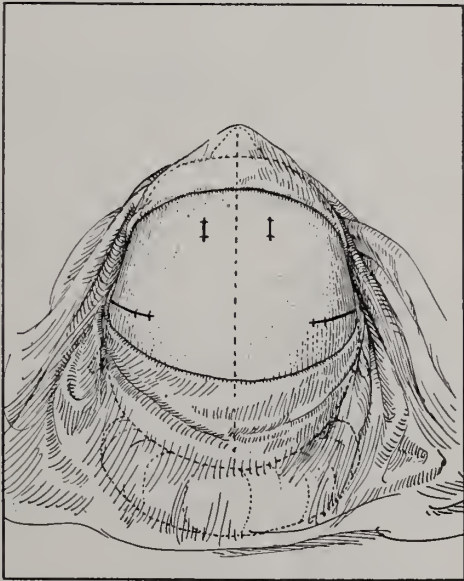
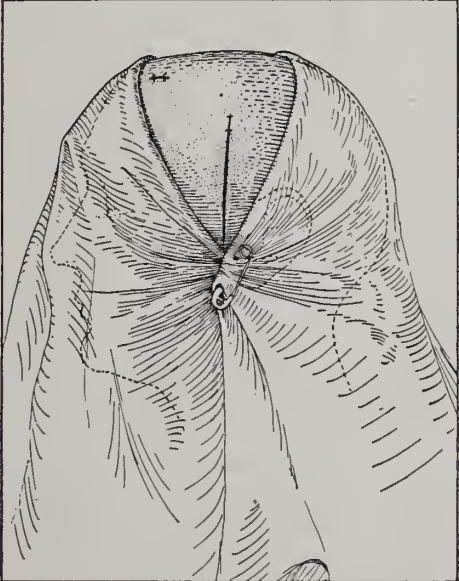


FIG. 4. CLINICAL CHART OF TYPE IV INJURY.

in the absolute or relative bradycardia; 3, the slightest rise in temperature, and, 4, irregularity in the



PATIENT LYING ON BACK. HEAD DRAPED FOR BILATERAL FRONTAL AND TEMPORO-PARIETAL PERFORATER OPENINGS AND FOR BILATERAL SUBTEMPORAL DECOMPRESSION.



HEAD MAY BE ROTATED TO EITHER DIRECTION DEPENDING UPON THE SIDE CHOSEN FOR DECOMPRESSION

FIG. 5. METHOD OF DRAPING PATIENTS REQUIRING OPERATION FOR ACUTE HEAD INJURY. FRONTAL TREPHINE OPENINGS MAY BE USED FOR LAVAGE OF BOTH ACUTE AND CHRONIC SUBDURAL HEMATOMAS AS DESCRIBED IN THE TEXT.

respiration rate. Ideally, treatment in these types of acute head injuries should be anticipatory, namely, before signs of decompensation are manifest.

Three sequelae of acute head injuries must be ruled out immediately in individuals demonstrating clinical evidence of increasing intracranial pressure. All three threaten the preservation of life and their non-recognition is a tragic circumstance.

Extradural hematoma may be seen with the usual clinical history and picture of trauma to the head, with initial loss of consciousness, a free interval followed by progressive coma, convulsions in the contralateral face and arm, and, finally, paralysis developing in the same sequence. Unfortunately, the clinical history may not be obtainable and patients may show only the evidence of increasing pressure⁹. Acute subdural hematoma characteristically shows no well-defined syndrome except that of pressure¹⁰. The same may be said of acute subdural hygroma¹¹, a collection of fluid entering the latent subdural space through arachnoid perforations. The operative diagnostic and therapeutic attack portrayed here is simple in execution and may be done under local anesthesia, with avertin supplement if necessary. The accompanying illustration shows the patient draped so that a diagnostic perforator opening may be made in either temporo-parietal region, according to possible localizing signs or on both sides in individuals presenting only evidence of increased intracranial pressure. Extradural blood clot is at once apparent and a subtemporal decompression on the indicated side with ligation of the middle meningeal artery may be carried out. Simple puncture of the dura may evacuate a collection of subdural fluid or blood. If actual blood clot is present subdurally, a small decompression opening may be made for removal of the lesion. Bilateral anterior perforator incisions are routinely marked out so that a second perforator opening may be made to facilitate lavage of a hematoma. Such perforator openings are routinely used in the treatment of chronic subdural hematoma. If nothing is found, we know that we are faced with the problem of combating uncomplicated cerebral edema. Whether to proceed with subtemporal decompression at this point is a matter of individual surgical experience and preference plus the exigencies of the individual case. The operative intervention described above adds but

little to an already over burdened patient compared to the relief that may be obtained. If no specific lesion is disclosed by this procedure, dehydration therapy is essayed, using sucrose 50 per cent intravenously in amounts depending upon the age and therapeutic response obtained. The initial treatment is 200 cc. of the solution, given over a period of thirty minutes, repeated every four to six hours, together with restriction of fluid intake to 1200 cc. a day for an adult individual. Early failure of response to increasing amounts of such hypertonic solution is an indication for subtemporal decompression in the classical method.

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REMARKS ON EVIPAL ANESTHESIA.*

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Newport News, Virginia.

Evipal soluble, a general anesthetic, is a chemical of the barbituric group. Its name is long; we cannot spell or pronounce it. More than one hundred papers and monographs during recent years have been published reporting upwards of thirty thousand cases in which evipal has been used. In only nine instances was this an unsatisfactory anesthesia.

We are sure that many of you present have read these reports; therefore we will refrain from quoting, but will speak as if a résumé of the same.

Complete anesthesia is had in about forty seconds. The blood pressure usually falls about 15 mm. Hg., returning to its former level on awaking. The pulse rate and character usually remain unchanged. If for any reason narcosis should be prolonged after fifteen minutes, ether, nitrous oxide or ethylene may be administered, beginning about ten or twelve minutes after the commencement of the evipal, that there be no interruption. Pre-operative medication is not necessary or indicated. For any post-operative pain codeine or morphine may be administered.

At the Veterans' Administration Facility, Kecoughtan, Va., evipal has to a considerable extent replaced ether as a general anesthetic. In our eye service at this institution we have recently employed evipal soluble in nine cases. The age of these patients being in the forties and fifties, and their behavior being similar, it is not necessary to report each case in detail.

Evipal Soluble is supplied in ampules of .5, and 1 gm. of the powder inclusive with a 10 cc. ampule of distilled water. The solution is not stable and therefore it is necessary to mix the solution just before one uses it in order to have a stable solution.

There are two methods of figuring the dosage: One is based entirely on the patient's weight: A maximum of 6 cc. of the 10 per cent solution per 100 pounds of the patient's weight; the other is based on the patient's individual reactivity to the drug, i. e., the rapidity and intensity of effect of the drug that one notices upon the patient immediately as the injection is being made. The depth of the

anesthesia produced is dependent upon amount of anesthetic introduced. In the majority of the cases it only required from 2 to 4 cc. to produce unconsciousness. The maximum dose to be given at any one instant must not be over 10 cc. The administration is started like any intravenous administration. The injection is very slowly introduced while the patient counts very slowly; this also aids in slower administration, besides giving an index as to the immediate effect. When the patient has reached the unconscious stage, one should delay for a period of thirty seconds in order to have a complete circulation of the blood and then continue the injection to the desired depth of the anesthesia.

What are the immediate effects of an intravenous injection of evipal? First, the patient very quickly falls asleep after only two or more cc. of the drug have been administered. There may be a very transitory twitching of the face and hands but this is about all of the stage of excitement that one sees and is immediately followed by complete muscular relaxation. The respiration is not materially affected; at first it is somewhat superficial and rapid, but soon becomes regular. The blood pressure level may fall from 15 to 20 mm. of Hg. but there is not a tremendous upset as one often finds in other anesthetics. Only in very rare cases do we find any change in the pulse rate; it may become a little fuller, but soon returns to the pre-operative normal of the patient. Thus we have a patient quickly anesthetized—with a minimum of discomfort to him and a minimum of danger as well.

This anesthetic has been used extensively in the last several years, upwards of two hundred and fifty thousand cases being on record in which it has been used. The mortality from its use is below the small percentage of unexplained anesthesia deaths of other anesthetics. However, there are a few contraindications in its use that would hold for most any other anesthetic, namely: Advanced cardiac, renal or liver disease, general sepsis, diabetic or arteriosclerotic gangrene, strangulated hernia, ileus, peritonitis, meningitis and carcinomatosis. It is not meant by the above that they are absolute contraindications, but an analysis of the record of the pa-

*Read before the Seaboard Medical Association of Virginia and North Carolina, at Virginia Beach, Va., December 8, 1937.

tients who have died falls in this general group. In other words, a poor pre-operative risk indicates a poor anesthetic risk as well. Caution and conservative doses—total, as well as fractional—are indicated in the presence of obesity, cachexia, dehydration, advanced hepatic disease, low blood pressure, cardiac or renal disease, sepsis senility, and alcoholism. I may add, further, that the drug is contraindicated in inflammatory processes of the throat in bronchiectasis and when respiratory obstruction exists. The administration of all barbiturates may produce spasm of the larynx and thereby cause mechanical obstruction *per se* at the site of the previously occluded larynx which otherwise would not cause any trouble at all. On only very rare occasions do we have any respiratory depression and this can be overcome by artificial respiration.

Today I shall only discuss one use of evipal anesthesia. I have listed its characteristics, its administration and dangers. Its uses in the field of medicine and surgery are legion, and I have been greatly impressed by its wide adaptability in all fields of medicine, surgery, obstetrics, gynecology, urology, and orthopedics. However, my personal contact has only been in its application to ophthalmology. As a result of reviewing the literature in search for an anesthetic that would be quick in action, simple in administration and leave no after-effects, I find that evipal has no superior. In the last three months I have limited its use entirely to that of ophthalmology. My series of cases has each been enucleation of the eye—a procedure requiring a good anesthetic, and each of the series is classified under emergencies. A general anesthetic usually crowds the operative field; therefore the benefits from the

operator's point of view in the use of evipal are many.

The series of cases, nine in all, are so alike typically that any one would serve the purpose as a whole. The average dose of evipal was six cc., and the shortest time before anesthesia ensued after the beginning of the anesthesia was before the patient could count nine in four second intervals and the longest was twenty. The average period of surgical anesthesia was twenty-one minutes. The patient when put to bed can be aroused and will respond to questions, but, if put in a dark room and not bothered, will usually sleep for about two hours. Our cases ranged sleeping from one hour and a half to two hours and twenty minutes. Perfect relaxation was obtained in all of the cases and the operation proceeded without the slightest difficulty.

I believe we have in evipal an anesthesia that will be a boon to ophthalmologists whose work is in many cases painfully tedious. I present this preliminary report to you to show one of the many special uses of the dose. I hope to prove to myself in the coming year a further extension of its use in the field of ENT. I am optimistic that its use can be so extended and will be the anesthesia of choice in this field also.

In concluding this short report, I believe we have an anesthetic here that can serve the specialist as well as the general man, for at times we all have painful procedures where the usual general anesthetic or even a local anesthetic would be impossible, and only an anesthetic of this nature would suit. Let us hope that many of us will try this in our respective fields and be as pleased as I am with the results.

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SCIATICA.*

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Sciatica is one of the disabling afflictions of the prime of life. Rarely does it affect a patient before he reaches his majority. It is as common in one sex as in the other. Domenico Cotugno,¹ an Italian, in his book "De Ischiade Nervosa," gave a complete clinical description of sciatica toward the middle of

*Read before the Seaboard Medical Association of Virginia and North Carolina at Virginia Beach, Va., December 8, 1937.

the eighteenth century. To this same man we owe the first accurate description of the cerebro-spinal fluid. Gussenbauer,¹ was the first to note the frequent association of sciatica with spinal deformity, although it remained for the Frenchman Brissaud,¹ to coin the term "sciatic scoliosis", to describe the spastic lateral curvature of the spine which often accompanies sciatica. Goldthwait,¹ of Boston, in

1911, by his studies of the pathologic anatomy of the vertebral column opened up a new field for consideration of the etiology of sciatica from a mechanical point of view. The next important work on this interesting subject was that done by Danforth and Wilson,² in which they demonstrated anatomically the possibility of the lumbosacral region causing mechanical nerve irritation and hence sciatica. This work was substantiated clinically by Putti. In 1934, Ober³ found that many patients with sciatica had an abduction contracture of the hip on the painful side and thought that possibly this mechanical derangement might be the cause of the pain in the thigh. Later, Freiberg⁴ found that variations in the relationship of the sciatic nerve to the piriformis muscle existed and that these variations probably caused sciatica in many instances by direct inflammation or mechanical irritation of the sciatic nerve.

Sciatica may be defined as pain radiating along the course of the sciatic nerve and its end branches. It is a symptom of trouble elsewhere and not a disease. The pain may be uniformly distributed but occasionally there are certain areas where it is more intense. The pain may begin abruptly or gradually. If the onset is abrupt the pain is usually sharp and shooting in character. If gradual, the onset is a dull ache, progressing into an intense pain radiating from the gluteal muscle down the posterior lateral aspect of the thigh to the calf muscle and occasionally into the foot. It may or may not be associated with low back pain.

The causes advanced for sciatica are as numerous as one finds for almost any other puzzling disease. One reason we have never been able to definitely localize the causative factor or factors is that sciatica, *per se*, does not cause death, so autopsy material for study has been very meagre. Furthermore, resection of the sciatic nerve *in vivo* along its course is impractical; therefore we have been called upon to theorize and to treat these patients by a trial and error method.

The following causes have been advanced for sciatica:

- Foci of infection;
- Pressure on the nerve within the pelvis;
- Diabetes and chronic alcoholism—from a true neuritis;
- Spinal cord tumors;
- Relaxation of the plantar arches;
- Subluxations of the sacro-iliac joint;

Unstable lumbosacral joint;

Anatomical changes in the relationship of the sciatic nerve to the muscles along its course.

Foci of infection are so well recognized by the profession as being the primary cause of inflammation in remote muscles, bursae, joints and even nerves that it is only necessary to remind you in passing to look for and eliminate them.

Pressure on the nerve from within the pelvis must be considered—from such causes as an inflammatory exudate, hardened impacted feces or a tumor mass. Careful bimanual examination in women or a rectal examination in men may easily eliminate these possibilities.

A true neuritis of the sciatic nerve as the result of diabetes mellitus or alcoholism is rare. The former may be ruled out by laboratory tests and the latter by the patient's history.

Spinal cord tumors may cause pain along the course of the sciatic nerve, but the sensory disturbances are soon followed by motor disturbances. Pain due to a spinal cord tumor is intensified by coughing, sneezing or straining. Included in the group of spinal cord tumors are herniations of the nucleus pulposus following rupture of the annulus fibrosis and hypertrophy of the ligamentum flavum. If in the course of the spinal fluid examination a block, partial or complete, is encountered or the spinal fluid protein is increased, tumor should be strongly suspected and lipiodal injection followed by roentgen ray examination should be done to localize the tumor mass. This examination is best done on a tilt top X-ray table with a "spot" film device, so that you may catch the lipiodal passing by the block if one is present.

While the organic lesions just described cause sciatica, they are present in the minority of patients suffering from sciatica in my opinion. Most of these cases are based on mechanical derangements and due in many instances to a decompensated muscular system.

One of these mechanical derangements is relaxation of the plantar arches, by which a pull is placed on the plantar and deep peroneal nerves which are the end branches of the sciatic nerve. By such a pull the strain may be transmitted to the sciatic nerve, or interpreted as being present in the thigh of the patient. I have seen a few dramatic cures by the simple expedient of placing an arch support in the shoe of a sufferer of sciatica.

Subluxation of the sacroiliac joint is one mechanical lesion that has been so well advertized by the profession to one another and to the lay public that it has been almost universally accepted as the cause of low back pain and sciatica by anyone who has any pain in this region. Actual subluxation of the sacroiliac joint is rare except in those cases following severe trauma to the pelvis. The sacroiliac joint is made for stability and not mobility. It has the strongest ligamentous support of any joint in the body and permits only a slight amount of rotary and gliding motion. Furthermore, the lumbosacral plexus of nerves from which the sciatic nerve arises is only contiguous and not directly associated with this joint. As added proof, tuberculosis and suppurative arthritis of this joint seldom ever cause sciatica. Except for ligamentous and muscular strains and inflammations I do not believe that this joint is often the origin of sciatica.

Let us consider why the anatomical set-up in the lumbosacral area may cause nerve disorders. Anatomic and roentgenographic examinations show that the lumbar intervertebral foraminae are not all of the same size. The foramen between the fifth lumbar vertebra and the sacrum is the smallest in the group, that between the fourth and fifth lumbar is slightly larger, while those between the other lumbar vertebrae are still larger. In contrast to the smallest intervertebral foramen between the fifth lumbar and the sacrum we find that the fifth lumbar nerve root is the largest of the group, the fourth nerve root is slightly smaller and the third nerve root likewise smaller still. Due to these changes, the fourth and fifth lumbar nerve roots are predisposed to injury by any change that may alter the size or shape of the foramen through which they pass. As these two nerves pass through the foraminae they are devoid of a protective arachnoid sheath and are surrounded by a rich plexus of veins. Therefore, any venous congestion that may arise in this area may cause pressure on these two nerve roots. These two nerve roots (fourth and fifth lumbar) are the largest branches to the lumbosacral plexus and form the greatest part of the sciatic nerve.

The lumbosacral joint is further predisposed to trauma and hence arthritic changes, as it bears the brunt of the superincumbent weight of the trunk and upper extremities. It is the meeting place of the movable spine with the relatively immovable pelvis. At this juncture we find various congenital abnor-

malities that may predispose to strains. Among these abnormalities are rudimentary articulations, and asymmetrical articulations, anterior and posterior displacements of the fifth lumbar vertebra on the sacrum, an increased lumbosacral angle, thinning of the intervertebral disc and unilateral or bilateral sacralization of the fifth lumbar vertebra. Any of these anomalies by deranging the smooth functioning of the joint may cause traumatic arthritis and hence a narrowing of the intervertebral foramen and pressure on the nerve roots. Also, any displacement of the fourth or fifth lumbar vertebra may cause a narrowing of the intervertebral foramina and hence pressure on the nerve roots. You may ask the question, "If these congenital anatomical features are the cause of pain in the back and legs, why don't they give rise to symptoms earlier in life?" The only explanation that I know of is that when we are young and active our muscles have a greater power of elasticity so that they function with the highest degree of efficiency, but as we become more sedentary in our habits these same muscles lose their elasticity (they become decompensated) and do not respond to sudden demands; therefore, instead of absorbing the shock and protecting these deranged joints, the force is directly applied to the joints and they degenerate, resulting in a reduction in the size and shape of the intervertebral foramina.

Another explanation for sciatica may be found in the muscles which are our first line of defense to trauma to the joints, as I have just pointed out. When we have pain, muscle spasm is Nature's method of protecting the injured part, and this is one of the objective signs that we find in an injured back or inflamed part. The muscles directly involved in the question of sciatica are the erector spinae and those connecting the pelvis with the hip and thigh. The gluteus maximus muscle has fibers of insertion or connection with the tensor femoris fascia, which in turn forms the mass overlying the sciatic nerve. If the spasm of these muscles continues for any length of time a contracture may ensue and this may be the cause of pain long after the original cause has subsided. Such may be the mechanism for the cause of sciatica in some instances for we know that stripping of the gluteus maximus muscle downward from its origin about the posterior superior spine of ilium, as described by Heyman,⁵ has relieved some patients of their sciatica. Also severance of the fascia overlying the tensor

fascia femoris muscle, as described by Ober, relieves some of these patients. Both of these operations accomplish their purpose in all probability by releasing the bow string formation that these two structures form and thereby overcomes the abduction, flexion contracture of the hip joint, relieving the strain placed upon the lumbar spine and/or taking the direct pressure off of the sciatic nerve in the posterior thigh.

Another congenital muscular abnormality that deserves attention is the relationship of the piriformis muscle to the sciatic nerve as brought out recently by Freiberg. The bifurcation of the sciatic nerve into the tibial and peroneal branches usually takes place in the upper portion of the popliteal space. However, in 10 to 15 per cent of the cadavers examined this branching takes place above the piriformis muscle. When this branching takes place above the piriformis muscle the peroneal nerve either goes over or through the muscle while the tibial nerve remains in its usual location under the muscle. As a result of such an anatomical peculiarity, any inflammation or contracture of the piriformis muscle may be transmitted to the nerve and usually to the peroneal branch. We know that in almost every instance when the pain extends below the knee the distribution follows the course of the peroneal nerve. Freiberg states that Lasague's sign—which is flexion of the thigh on the pelvis with the knee flexed and then extending the knee—is the best means of differentiating whether the pain reproduced is due to stretching of the piriformis muscle or strain of the low back. This maneuver stretches the piriformis muscle long before it stretches the nerve itself or the back muscles. I have personally seen two such cases operated on, and release of the impinged nerve from the muscle gave complete relief from the sciatica.

TREATMENT

Following an exhaustive examination and deduction as to the causes for sciatica in a particular patient, plan your form of therapy to relieve the pain at its origin. Except in certain instances, such as tuberculosis of the spine or severe mechanical abnormalities as a spondylolisthesis which require a spine fusion for cure, the treatment should be conservative in the early stages.

Conservative treatment should consist of rest on a firm bed, local heat, massage, and, in some instances, Buck's extension, using only enough weight

to relieve the muscle spasm present. As to the form of local heat applied, I believe the deep or penetrating heat—as that produced by diathermy or the short wave apparatuses—to be the best and will often relieve an acute attack in one to three applications. The procedures just mentioned are all directed towards relieving local inflammation and in many instances are all that are necessary. In other instances the patient will require support for the low back and pelvis. Usually a belt will suffice in men, but in women a corset is much more comfortable.

The use of epidural injection—employing 1 per cent novocaine and saline to break up meningeal adhesions by the pressure of the solutions—has been advocated. Many men report some excellent results but so far I have never had the good fortune to relieve a patient by this method, although I have tried it several times.

Stretching of the sciatic nerve on the involved side is a blind procedure and is to be condemned. If one believes that adhesions are present about the nerve they should be released by open operations. The part of this procedure that does the most good in my opinion is the rest in a plaster cast that follows the stretching.

The only place that drugs have is to ease the acute pain while attempting to localize the origin of the trouble. Among these drugs, the salicylates are the best to employ. Morphine should not be used because of the likelihood of making the individual an habitué. I have recently had a patient who stated that she became a morphine habitué because of intractable sciatic pain.

Intraspinal injections of alcohol to relieve sciatic pain are too dangerous to employ in such an affliction. This procedure is permissible to relieve the intractable pain due to malignancy where, if a paralysis results, no great harm has been done.

If the patient fails to respond to conservative treatment that has been properly carried out, you are then justified in attempting one of the many operative procedures. Among these procedures is the one devised by Ober and this has been highly successful in a selected group of patients. Those patients who have an abduction—flexion contracture of the affected hip—are the ones in whom you may expect the greatest relief. The test for this deformity consists in attempting to abduct the extended abducted thigh with the knee at a right angle, the patient lying on his side. The test is positive if the

knee cannot be brought to the table but remains in an abducted position, and a tight iliotibial band may be palpated. Division of this tensor femoris fascia is done just above the trochanter and usually under local anesthesia. The patient is required to stay in the hospital only two to three days and the procedure offers such remarkable results that I see no reason to unduly prolong the conservative treatment in this group of patients.

As this procedure of Ober's is so simple and offers such a high percentage of relief from sciatica, I believe it is much better to try it before an exploration of the sciatic nerve and pyiformis muscle is made, as suggested by Freiberg. However, I do believe that the relationship between the sciatic nerve and the pyiformis muscle is responsible for a great many of the sciaticas that occur without an associated low back pain.

One argument against the Ober operation is that we are operating on a symptom and not the cause of the pain. This may be true, but we are all interested in giving our patients relief, and this procedure has been able to do it in many instances. True, we do

not know yet just how long these patients will be relieved of their pain, but if they are relieved for only a year the procedure is worth while to those patients.

If all of these procedures fail and we have definite mechanical defects in the low back, it is then time to consider a spine fusion, operative enlargement of the intervertebral foramina if it is narrowed by an arthritic spur, or removal of a herniated nucleus pulposus.

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Wainwright Building.

A CASE OF CONGENITAL MEGACOLON TREATED BY DIATHERMY.*

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There is considerable evidence in favor of the opinion that congenital idiopathic megacolon is in many instances caused by an imbalance in the autonomic nervous mechanism of the colon and rectum. The colon and rectum receive their nerve supply from both the sympathetic and parasympathetic divisions of the autonomic nervous system. The sympathetic nerves inhibit the muscle of the bowel and are motor to the internal anal sphincter, while the parasympathetic nerves produce the opposite effect. A considerable number of cases of congenital megacolon have been greatly benefited and some apparently cured by the resection of the sympathetic nerve supply of the lower part of the bowel.^{1, 2, 3, 4, 5} It would nevertheless be desirable to avoid surgery if relief could be obtained by other methods.

Harmer and Rowntree⁶ showed in 1930 that the application of diathermy to the cervico-thoracic re-

gion of a patient afflicted with chronic infectious arthritis produced a temporary rise in skin temperature and an increased mobility of the upper extremities. This effect resembled that previously observed after sympathectomy in cases of arthritis. Diathermy applied locally to the affected parts caused no relief. Since the sympathetic nerves supplying the lower bowel take origin in ganglia which are located in the abdominal area, anterior and anterolateral to the spinal column, it might be thought that the application of diathermy to the abdominal region would cause changes in the action of the bowel musculature resembling those observed after sympathectomy. Amberg,⁷ in 1930, reported a case of congenital megacolon which was successfully treated by diathermy, one electrode being applied over the lower dorsal and lumbar vertebrae and the other over the lower part of the abdomen. The beneficial effects were striking, and at the time of reporting had persisted for three months after the

*Read before the Stuart Circle Clinical Club, November 10, 1937.

treatment was stopped. In the case reported at this time, sympathectomy was first considered, but it was decided to determine the effects of diathermy and to resort to surgery later if necessary.

CASE REPORT

The patient, a boy six years old, was admitted to the Sheltering Arms Hospital on July 2, 1936. His chief complaint was persistent constipation which has existed since birth. It was stated by his mother that he had rarely had a spontaneous bowel evacuation, and then only with great effort and straining after a week or more had elapsed without enemas. After some time without any bowel movements he had often become distended with gas and feces, and had suffered much pain. He had usually had a poor appetite and had always been under-weight. He had always tired easily. At the time of admission he had not had an evacuation for three days. Examination revealed the following significant findings: The patient was a rather under-nourished looking boy with poor muscular development. The abdomen was much distended with gas and hard fecal masses, and there was active visible peristalsis with borborygmus. The ribs flared outward, and the heart was pushed upward by the abdominal contents. A soft systolic murmur was heard in the third intercostal space at the point of maximal cardiac impulse. It was impossible to outline the lung bases by percussion. The circumference of the abdomen at the level of the navel was twenty-four and one-half inches, and at the costal margin was twenty-eight inches. The weight three days after admission was forty-three pounds. A roentgenogram of the chest showed considerable elevation of the diaphragm. Roentgenographic examination of the gastrointestinal tract revealed no abnormalities in the stomach and small intestine, but showed marked dilatation of the descending colon, sigmoid colon, and rectum. On the basis of the history and physical examination a diagnosis of congenital megacolon was made.

Treatment was begun by attempting to reduce the distension of the abdomen. A low residue diet was prescribed. Small saturated magnesium sulphate enemas, and later normal saline enemas, were used with fairly good results. There was complete disappearance of the distension by the third day, but one large fecal mass persisted in the lower right abdominal quadrant. On the fourteenth day (7-16-36) short-wave diathermy treatments were started.

These treatments were given once daily for twelve days, one electrode being placed over the lower thoracic and lumbar vertebrae and the other over the lower abdominal area. Each treatment lasted twenty minutes, and a current of 1,000 milliamperes was used. During the first five days of diathermy treatment the patient had a daily spontaneous bowel movement. Daily enemas were necessary during the next five days, possibly because of the persistence of the fecal mass in the lower right quadrant. It was later discovered that the treatments were improperly applied on these five days, since, due to an error by the intern, the electrodes were so applied as to produce principally skin heat with very little deep heating effect. On the tenth day of diathermy treatment three ounces of a 50 per cent solution of hydrogen peroxide were injected into the rectum for the purpose of promoting disintegration of the fecal impaction. Though most of this was expelled promptly, a normal saline enema given an hour later was very effective. There followed a period of three days during which the patient suffered from epigastric pain of considerable severity, and lost his appetite almost entirely. There was no muscular rigidity. The temperature rose to a maximum of 102.5 (by mouth), returning to normal when the pain stopped. Daily spontaneous bowel evacuations began on the day after the hydrogen peroxide enema was given and continued for twenty-five days, without enemas or laxatives, until discharge from the hospital (8-22-36). Shortly before leaving the hospital the patient's weight was forty-five and one-half pounds, a gain of two and one-fourth pounds since admission; the circumference of the abdomen at the navel was twenty-one and one-fourth inches and at the costal margin twenty-four and one-fourth inches, a reduction of three and one-fourth inches and three and three-fourths inches respectively. He had improved considerably in appearance, there being better color and more subcutaneous fat on the face and extremities. During the last twenty-one days in the hospital he was given a soft diet.

A letter from the patient's mother three weeks after leaving the hospital stated that he was again requiring daily enemas, but that he was in excellent health otherwise, had no abdominal distension, and weighed forty-eight and one-half pounds.

SUMMARY

A case of congenital megacolon is reported in which treatment by diathermy was followed by re-

lief of symptoms which continued at least twenty-five days.

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THE USE OF TURNBUCKLES IN TREATMENT OF FRACTURES OF THE PELVIS. A PRELIMINARY STUDY OF FOUR CASES.

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In the fall of 1936, we received a reprint on the treatment of fractures of the acetabulum by the use of turnbuckles and I regret to say that this was lost and I can not remember who did the work or the technique he used, but it impressed me as a very good conservative way to treat these cases. Since that time I have used it in three of these cases and in one case of wide separation of the symphysis.

In a wide search of the literature I have been unable to find this article or any other on this method; consequently, I am unable to give credit for the origin of this method to the originator. Its simplicity and effectiveness impressed us in the few cases in which it was used.

Nearly all central fractures of the acetabulum are caused by direct trauma over the greater trochanter, forcing the head of the femur inward. The majority of these cases are accompanied by other fracture of the pelvis, usually the rami of the pubes, and quite often with some dislocation or fracture of the sacro-iliac joint.

The treatment should be directed so as to prevent any deformity and give good function. These fractures of the acetabulum tend to give a traumatic arthritis with limitation of motion and a painful joint.

TECHNIQUE

After the diagnosis has been made and complications either ruled out or treated, the patient is ready

for reduction. This should be done as soon as it is possible, usually after two or three days when all signs of shock have passed. Without anesthesia, a plaster of Paris cast is applied on both legs, from the toes to the groin, with the bony points well padded and with a basswood splint incorporated on the medial aspect to distribute the pressure. Then a short turnbuckle which is closed is incorporated as near the perineum as possible (this turnbuckle is about four inches long) and a long turnbuckle about sixteen or eighteen inches long is applied open about the middle of the leg. After the plaster has set, the small turnbuckle is gradually opened and the long one closed, thus acting as a fulcrum forcing the head of the femur out of the acetabular cavity. This technique is reversed in separation of the symphysis and it is forced together. I recall from the unknown author of the reprint all cases reported were fractures of the acetabulum, but by reversing the technique the turnbuckle works even better on separation of the symphysis.

A SHORT REPORT OF CASES

J.H.B. was admitted to hospital on January 5, 1937, following an automobile accident four hours before in which he was thrown from the car and got severe brush burns of the face and arms and hurt his hip.

Examination on admission showed a boy, age 16, in pain and some shock. Blood pressure was 75/40.

There were several small abrasions over the face and arms; also there was marked tenderness over the symphysis pubis with a defect at this point. Marked pain was caused by moving and by compression of the crest of the ilia. Abdomen flat and soft. Catheterized specimen showed gross blood.

X-rays revealed marked separation of the symphysis pubis and a fracture of the rami of the right pubic bone.

He was treated for shock and his bladder was observed for eight days. Then turnbuckles and cast were applied. Four days later, X-rays revealed a reduction of the symphysis and a bilateral spica was applied. He was allowed to go home in four days and kept in this cast for eight weeks, then allowed up on crutches. Four months later, X-rays revealed healed fracture of the pubic bone, symphysis still in contact, and clinically he was completely cured without any discomfort.

L.M. was admitted to hospital on June 15, following an automobile accident in which he was thrown out and landed on his right hip. Examination and X-rays revealed a central fracture of the right acetabulum and fracture of the rami of the right pubis with a partial dislocation of the right sacro-iliac joint. No complications were found, so cast and turnbuckles were applied after two days. Reduction completed in four days and spica applied. Cast removed in eight weeks and the patient allowed on crutches. Six weeks later, patient was walking without a limp and clinically was not restricted in his motions and not complaining of pain.

A.G., twenty-one, male, fell from a tree, hurting his right hip. Examination and X-rays re-

vealed central fracture of the right acetabulum and fracture of the rami of the pubic bone. After three days, fracture reduced with turnbuckles and spica applied, the patient being allowed to go home. Cast was removed by family physician who stated patient had good motion, but was complaining of some discomfort four weeks after removal of cast.

E.G., colored female, forty-five, admitted to hospital following an automobile accident. Examination and X-rays revealed a central fracture of the right acetabulum with fracture of the rami of the pubis on the same side. No complications appeared and two days later a cast and turnbuckles were applied. Six days later reduction was complete and spica was applied. Cast removed in eight weeks and the patient was allowed up on crutches. Time is too short to judge the final results in this case.

CONCLUSIONS

Few conclusions, if any, can be drawn from so few cases.

1. All four had multiple fractures with displacement.
2. Position of fragments was improved in all cases.
3. In three of the four cases, which have been followed over six months, the results—so far as function is concerned—have been excellent, but one of the cases is still having discomfort about the hip. The fourth case has not been out of her cast long enough to determine the results.
4. The stay in the hospital in uncomplicated cases averaged about eight days.

307 Professional Building.

OVER-ACTIVITY AS A POTENT FACTOR IN THE ETIOLOGY OF SOME NERVOUS DISEASES.

ALFRED GORDON, M. D.,
Philadelphia, Pennsylvania.

Having had an opportunity, during a number of years, to observe individuals working in lead, a problem presented itself for solution. Some workers showed left-handed wrist-drop, others right-handed; another had a double wrist-drop; another had paresis of the right leg. In all these cases there was an absolutely identical etiologic factor, and still the functional disability did not manifest itself in the

same portions of the body. In several professional pianists I have observed attacks of cramp-like sensations in the wrist, and in others in some of the fingers. The occupation and the continuous efforts being the same, the seats of the disorder are not identical.

In a large group of tabetic patients, I had three cases of the cervical type in which ataxia began in

the upper extremities. Why, therefore, is the functional disorder more marked in the arms than in the lower extremities, when the specific infection is of a general character? In some of my tabetic patients the eye symptoms were conspicuous from the beginning. In others the leg symptoms were the first to appear and the eye disturbances appeared quite late in the course of the tabes. In some of my cases the involvement of the sphincters was a late manifestation; in others a very early one. These differences in the onset and localization of functional disability in various persons suffering from tabes dorsalis are striking and require an etiologic explanation, especially in view of the same syphilitic toxic agent in all cases of tabes.

Why is it that paresis is most frequent in persons who exercise their intellectual more than their physical functions? I had four patients with juvenile paresis in whom the symptoms made their appearance with their entrance into college, otherwise speaking, at the time of greater demands on intellectual efforts. What explanation can one find with regard to such an onset?

In a group of cases of progressive muscular atrophy of spinal origin, the affection began in the upper extremities in some patients, in the lower in others; in one limb in some cases and simultaneously in two symmetrical limbs in others.

The largest majority of my poliomyelitic cases were in children, in whom the affection was confined to the lower part of the body. In five adults the functional disability was observed in the one or both upper extremities. Three of these individuals were tailors and two were bricklayers. What is the reason of the difference in the localization of the pathologic process in the children and adults?

In three cases of pernicious anemia in men there were evidences of a degenerative state of the spinal cord. In one case of the same affection in a middle-aged woman the central nervous system was not in the least involved. If a toxin is supposed to be the cause of the pathologic process of the cord, wherein lies the difference in the cases of the men and of the women?

Weigert and Roux long ago expressed the view "that normally there is a state of equilibrium among all cells of the body, and their interrelation is such that when one cell becomes diseased or otherwise disturbed, the energy of the cells which lie close to

it develop an increased energy, namely, proliferation, and, *per se*, repress the affected cell still further. Weigert also calls attention to the fact that the process of functioning of a tissue is accomplished by its destruction, which in normal conditions is rapidly compensated by a proper supply of nutrition. But if the latter is not forthcoming, the above-mentioned equilibrium is disturbed and degeneration takes place. Edinger went further and said that if, instead of—or with—a defective nutritive supply there is an excessive functioning of a cell, the increased growth of the neighboring cells will lead to a degeneration of that over-active cell, which naturally is then less resistant. This is particularly seen when both elements are at work, namely, over-activity and nutritional deficiency.

Edinger succeeded in demonstrating by some experiments the rationality of his contention. It is therefore evident that over-activity or superfunction is a powerful predisposing factor in producing diseased conditions in an individual whose organism is potentially under the influence of some toxic or otherwise abnormal element. Since function is apparently a potent agent in creating a syndrome of abnormal phenomena, it will be of interest to analyze closely a few of the diseased processes of the nervous system from that particular standpoint.

Occupational Neuroses.— There were thirty-seven patients distributed as follows: twelve stenographers, five newspaper reporters, three violinists, six pianists and eleven shoemakers. For many months without interruption they strenuously carried on their work. Moreover, they all appeared to be underfed. In the stenographers and reporters the localization and character of the disorder were not identical. Some of them had the paralytic form, namely, a sudden sensation of fatigue and numbness in the hand while writing. In others there was an actual cramp, namely, a sudden extension of the index finger and flexion of the thumb. In others a cramp appeared in the wrist, but not in the fingers. One of the three violinists developed a cramp in the right hand and the other two in the left hand. Of the six pianists, in two a sudden paretic condition would set in in the left wrist; the other four had a similar condition in the fingers of the right hand. Of the eleven shoemakers, six presented attacks of cramps in the biceps muscles of one or the other arm: the remaining five individuals had attacks

of numbness in the thenar muscles of one or the other hand.

A close analysis of these thirty-seven cases convinced me that the occurrence of the neurosis in one particular segment or portion of a limb was due to a predominance of effort practiced by the affected region. Thus, the violinists who had attacks of cramps in the left hand happened to be left-handed. The two pianists with the paretic attacks in the wrist were trained by teachers whose method consisted of holding the wrist stiff during the exercises.

Chronic Lead Intoxication.—The next group of cases in my series comprises sixteen cases. Five of them had double wrist-drop. Two men had wrist-drop only on the right side; three men had wrist-drop only on the left side; three men had wrist-drop on the right side. Two men, type-setters in a printing house, presented a paretic condition of the three first fingers on the right side. Three men were house painters who used a small size brush for their work. They presented wrist-drop on the right side. One individual was supervisor in a white lead factory for ten years. He had to spend the entire day in the lead atmosphere. He developed a paresis of the right leg with a markedly diminished knee-jerk and Achilles tendon reflex. All the patients of this group had general evidences of plumbism, namely, blue line, obstinate constipation, albuminuria, headache. An inquiry into the character of the work of the sixteen patients revealed the following: The individuals with double wrist-drop worked for a number of years in white lead factories where both arms were used with equal effort. The men with unilateral wrist-drop worked in lead colors, and their work consisted of mixing the dyes, which they did with one or the other arm. Unilateral extensor palsies in plumbism are not a frequent occurrence. Nevertheless, in the few cases which I studied from the standpoint of exhaustion, I found that the nature of employment coincided with unilaterality of paralysis. The two type-setters, all right-handed men, used in their work chiefly the thumb and the first two fingers continuously. Although the general symptoms of saturnism were present, nevertheless the local symptoms were conspicuous in those fingers which are most persistently in use and therefore most readily fatigued. The three house painters,

being compelled to extend the wrist thousands of times in succession, naturally developed a paralysis of the extensor muscles of the wrist. All being right-handed, they presented a right-sided wrist-drop. The supervisor of the lead factory who developed a paresis of the right leg had to watch over groups of men. In making his rounds he would stop at a certain group and remain in one sitting position for an hour at a time. While sitting he would place the right ankle on the left thigh and keep up that position during the entire hour. He repeated this position at each group of men whom he was obliged to inspect. This attitude was considered his habit, and he was never seen at the factory in another position. His wife corroborated this statement and said that that was also his sitting position in his home.

Poliomyelitis.—The poliomyelitic cases comprise a group of thirty, among whom there were five adults and the others were children. Of the former three were tailors and two bricklayers. One of the tailors had the right upper and lower limbs involved. Another tailor had both upper extremities at first stricken, but later the left arm recovered. The third had the right arm and right side of the face paralyzed. Evidently here the cervical cord as well as the medulla was affected. The two bricklayers had both their right arms and both lower extremities involved. The identity of the condition in both patients was striking. It is evident that the five adults whose chief exertion was manifest in the upper limbs had the cervical portion of the cord involved, as the ganglionic cells of this part of the central nervous system supplied nerve fibers to the brachial plexus, hence to the upper extremities. Of the twenty-five children, ten had, in addition to one or both lower limbs, also one or both arms involved. Inquiry revealed that they belonged to very poor families, and being from eight to twelve years of age, they had to do considerable amount of manual work at home such as scrubbing, cleaning, etc. Thus the involvement of the upper limbs can be readily conceived. On another page the usual occurrence of the poliomyelitic process in the lower extremities in children was mentioned. The reason of it lies in the great activity of the limbs, which are in a state of development in young children.

Progressive Muscular Atrophy.—In a group of

fifteen cases of progressive muscular atrophy of spinal origin, the affection began in the lower extremities in one policeman and in one watchman; in two Italian street cleaners in one upper limb. The remaining eleven cases showed an onset in both hands. The latter patients were all either laborers or tradesmen. The occurrence of the disorder in the lower limbs of the policeman and watchman speaks strongly in favor of the view in my thesis.

Pernicious Anemia.—There were four cases of pernicious anemia in my series. In the men, three in number, evidences of degeneration of the spinal cord were present. They presented symptoms of ataxic paraplegia, with diminished or absent knee-jerks. Two of them were laborers and one a collector for an installment house. The fourth patient, a woman, housewife, presented no disturbances of locomotion and the knee-jerks were normal. Here again we have a corresponding link between the degree of over-activity of certain portions of the body and an organic lesion of that part of the nervous system which controls the affected portions.

Paresis.—Out of thirty-nine paretics twenty belonged to the class of individuals who lead a purely intellectual life. Teachers presented the majority. In them the mental symptoms were the most conspicuous. With the exception of the eyes, other physical symptoms were very slight, namely, tremor of hands, slightly increased knee-jerks and no toe phenomenon. Nineteen patients were tradesmen in whom the physical as well as mental symptoms were equally developed. They presented a condition called "tabo-paresis," namely, symptoms of tabes, together with mental disturbances found in general paralysis of the insane. If we consider the combination of physical and mental efforts displayed in the occupation of tradesmen, we must admit that the above observation as to the morbid manifestations in these individuals is of no little interest and is more than a mere coincidence. Four patients of the entire group had juvenile paresis. Their ages ranged from sixteen to twenty. The mental manifestations made their appearance at the time of their entrance to college. It is a period of intellectual life when application and mental efforts are tested at their utmost. It is also highly interesting to notice the variability of the eye conditions in the paretics. Among the tradesmen there were two jewelers and three bookkeepers. It is remarkable

that in every one of these men optic atrophy and Argyll-Robertson pupils were very striking and developed early in the disease. In the persons who led a purely intellectual life there were twelve teachers. All presented pupillary symptoms and some also palsies of the third nerve. Five cashiers of banks showed besides third nerve palsies also evidences of eye-ground changes. The inference is consequently the same as in the cases of tradesmen from the standpoint of the principle of "exhaustion."

Tabes.—In considering the group of cases of tabes, forty-seven in number, the inquiry was made as to the character of occupation and the degree of exertion of the tabetics. The largest majority (thirty-nine) were individuals who did a great deal of standing or walking and carrying heavy weights. In this group there were letter carriers, policemen, messengers, icemen, laborers and motor-men of street cars. The lower extremities alone were at first involved and the tabetic process began with disturbances of locomotion. Out of the remaining eight patients, three presented at first ataxia of the upper extremities and diminution of knee-jerks, so that the diagnosis of cerebellar disease was originally entertained. Two of these patients were stenographers and the third, a woman, worked at a laundry. The stenographers' duties were particularly laborious and their hours were very long. They eventually developed leg symptoms.

In connection with the subject of tabetic ataxia in the extremities, it is well to recall what was said on the introductory pages with regard to the sensory neurons. The continuous and uninterrupted flow of impressions received by our peripheral sensory apparatus is the most important factor in all muscular contractions and in the display of our joints. Should the organism be invaded by a poison, such as syphilitic in tabes, the over-functioning tissues or organs naturally will suffer first, hence the disorder of locomotion and coordination, which so much depend on the function of the sensory neurons.

Proceeding further with the analysis of tabetic manifestations with reference to the principle of "exhaustion," the following is observed: Three patients who led a sedentary life worked in poorly lighted rooms, two of them, clerks in the same establishment, were assigned offices with windows opening in a very narrow and small yard, so that often they had to use gas light. The third had to

use gas light all day. He was cashier in a small store and his desk was in the back of the store. All three when first seen presented optic atrophy without ataxia, but with much diminished knee-jerks. Two patients were electricians working in very brightly illuminated rooms and glaring light for ten hours daily. They also presented optic atrophy as an early tabetic manifestation. At the International Congress of Medicine held in 1923 the effect of very bright light was considered as injurious to the eye, owing probably to the presence of ultra-violet rays. The early occurrence of optic atrophy in the two electricians is undoubtedly due to this latter circumstance.

Thirty-two patients of my entire tabetic series presented ptosis in one or in both eyes and Argyll-Robertson pupil in one or both eyes. If we consider the extraordinary activity and the incessant display of the light reflex from the moment we awake in the morning until we close our eyes for sleep—if, moreover, we consider the activity of the levator palpebrae which keeps the eye open—we cannot be surprised at the fatigue of these over-active functions in a body which is under the chronic influence of syphilitic toxemia, and therefore the early and frequent occurrence of Argyll-Robertson pupil and ptosis in cases of tabes are to be expected.

CONCLUSIONS

The present study, while it does not explain every morbid manifestation, nevertheless is sufficiently suggestive as to the effect of over-function of organs on their early morbidity. It teaches that a body which is potentially diseased, or which is under the influence of a disordered metabolism through the presence of a toxic material, will develop morbid phenomena primarily in parts functionally exhausted. The "exhaustion view," as we have seen, is demonstrated quite satisfactorily in syphilitic affections of the nervous system, in alcoholism, in plumbism, in acute infectious diseases such as anterior poliomyelitis, in profound anemias and in other conditions accompanied by profound metabolic disturbances of any nature. It explains the constant and almost uniform and earliest involvement of those portions of the body that are kept in a state of fatigue.

This observation points to a very important feature in the domain of prophylaxy. Bearing in mind the pathologic potentiality in cases of chronic toxemias,

early treatment of the latter, combined with removal from the usual occupation at the earliest possible moment, is apt to prevent localized morbid manifestations such as we have seen above with regard to locomotion and eye manifestations in tabes, or localized palsies in intoxications, for example. A potential syphilitic individual will thus be able to avert for a long period of time the early on-coming of morbid manifestations of syphilitic or parasymphilitic character in the domain of the nervous system. The principle of prevention is here strikingly evident. The recognition and adoption of the view of "exhaustion" in affections of functional and organic nervous disease appears to be far reaching.

1900 Locust Street.

Correspondence

Real Service.

The following is taken from a letter of May 9, written by Miss Margaret Pritchard, R. N., with the E. L. Graham Hospital at Kwangju (Koshu), Korea, sent to the Southern Presbyterian Mission at Nashville, Tenn. As it tells of the work of two Virginians—Drs. L. C. Brand and James McLean Rogers—we feel it will be of interest to a number of our readers and will be but a small tribute to their service.

On the 19th of January Dr. Brand was taken very ill with a severe form of influenza. There followed a long illness resulting in his departure from this life, March 1, at 8 a. m. We all thought a week before he left us that he would be back at his work, which he loved so much, in a few weeks. He has left such a big vacancy that it is staggering to think about. He was a loving, thoughtful, unselfish physician and friend to Koreans and missionaries alike. The statement made at his funeral by the Korean pastor that every Korean in this section of Korea was poorer because of Dr. Brand's home-going is certainly true. The splendid medical plant and native staff that he leaves is certainly a fitting memorial to his almost eight years of fruitful service in Kwangju. The morning of his departure I told the staff that I knew that he would want the work to go on as usual. They courageously faced

the patients and the clinic was closed only during the funeral. If you could know how emotional these people are at such a time and how much they express their emotions you would appreciate their response. We can only say God's will be done and thank Him for the privilege that has been ours of being associated with such a Christlike doctor in the medical service here for almost eight years and strive to do our part in continuing to carry on the work. The day of Dr. Brand's funeral some Korean friends started a memorial fund with the hope that it will be added to, sufficiently to eventually erect a memorial that will be fitting.

Just when I was feeling the added burden of the work most after his going, Dr. Rogers volunteered to leave his busy hospital two days a week and give that time to this hospital until his furlough which starts in June. After that Dr. Preston who will have charge of the Soonchun Hospital in Dr. Rogers' absence will come one day a week. My first reaction was that God certainly provides for His work, but it is being done at a big price just now as far as our medical work is concerned. Dr. Rogers leaves a hospital with over 100 in-patients to come to help us. He arises at 4:30 the days he comes here and gets home at 10:30 p. m., makes rounds in his own hospital after that. By the time he gets to bed it is past mid-night and he has spent over nine hours of the day on a third-class coach with straight wooden-back seats. He does it joyously and gladly but we all know he cannot do that indefinitely. Dr. Boggs is the other doctor in our Mission and he is carrying the Chunju and the Kunsan Hospitals. Please pray that we may soon have help in this critical situation in which our medical work finds itself.

Dr. Brand leaves a very finely trained and capable native doctor in Dr. C. E. Rowe. Dr. Rowe is a splendid surgeon and a good medical man. We are very proud of him and most thankful for him. We feel that he has been raised up for just this time. The work has gone on without any slump. In fact we have had an unusually busy April. The second t. b. ward which was the gift of a missionary has been opened and has only one empty bed today. We have eleven cases in this department now and room for only two more.

I have just finished my annual report for the Mission and the past year's statistics are interesting to me, hope they will be to you. We have had 1,154 in-patients with a total of 9,728 in-patient days.

Total operations 696. The clinic had 4,539 New patients with 8,010 return visits. There are enrolled in the free baby clinic 136 babies. Total receipts Yen 25,320.65. We received from the Mission Yen 1,320 and Dr. Brand's and my services. The medical work out here is most encouraging. The most discouraging feature being our lack of medical missionaries. We are rejoicing over the long-prayed-for nurse for Kunsan, Miss Elizabeth Woods, whose parents, three brothers, and one sister are missionaries to China. I was especially glad to welcome her since I was the only full-time nurse in our Korea Mission this year until she arrived, Misses Kestler and Hewson being on furlough.

I cannot close without telling you about our hospital baby. The wife of our hospital outside man died from tuberculosis leaving a tiny baby boy with no one to feed him or care for him but an old grandmother. Mr. Avison our Y.M.C.A. Secretary, gave the father a fine goat that furnishes food for the little fellow, our hospital is his home and our nurses take care of him. He is growing nicely and is a source of pleasure to all of us.

Why Not Remember Them?

Richmond, Va.
June 7, 1938.

TO THE EDITOR:

A few years ago I wrote a paper on—"Surgeons In The Confederacy", for the Richmond Chapter, United Daughters of the Confederacy.

When one does research on a particular subject one is more apt to take notice of things pertaining to that subject. Often in going through the cemeteries I notice the monuments of the soldiers buried there. When I see some so badly neglected with such inscription as—"Gone But Not Forgotten"—with weeds as high as your head and one has to push them aside to be able to get the inscription on the monument, it does make one stop and think. The men who saw the crimson blood shed for their Country's call—wounded and killed—that their graves should be so sadly neglected.

I have in mind one special surgeon—Hollywood Cemetery—JAMES B. SOUTHALL, SURGEON, C. S. A., DIED DECEMBER 10, 1865. The Virginia State Library shows that one James Southall enlisted from Charles City county, Va., 1864, and surrendered at Appomattox Court House.

Shall it be in vain that these men served their

country? Do you think there could be a Surgeon's Society formed to look into the neglected graves of the men who relieved the suffering of the men who fought so bravely for the protection of their homes, '61-'65? Perhaps an article written in some magazine would remind relatives of the neglect of these noble men—"Gone But Not Forgotten".

JULIA E. SAUNDERS
(MRS. WALLACE C. SAUNDERS).

Miscellaneous

Assembly of Laboratory Directors and Serologists.

The intensive campaign to stop the spread of syphilis now being waged throughout the country makes it imperative that only those serologic tests of proved efficiency be made available to private physicians and health officers. Diagnosis of syphilis must be prompt and accurate. The serologic blood test, becoming positive within two or three weeks after the onset of primary syphilis and remaining positive in the vast majority of untreated patients throughout the entire course of the disease, is the most important evidence of the existence of syphilis.

The American Society of Clinical Pathologists in cooperation with the U. S. Public Health Service realized the need for reliable serodiagnostic tests several years ago. The work of the Committee on Evaluation of Serodiagnostic Tests for Syphilis is sufficiently well known to require no comment. It is the opinion of this Committee that its studies of the efficiency of the performance of serologic tests have progressed to a point where material gains would be made by a thorough discussion on common ground in which all those interested in the control of syphilis through laboratory methods may participate.

Plans are being developed for an assembly of laboratory workers from the entire country. All such workers both from private, hospital and public health laboratories, as well as physicians and health officers interested in the control of syphilis are invited to attend.

The proposed meeting, under the auspices of the Committee on Evaluation of Serodiagnostic Tests for Syphilis, with Surgeon General Thomas Parran, Chairman, is scheduled for October 21 and 22, 1938, at Hot Springs National Park, Arkansas.

The aims and purposes of the assembly will be to consider means and methods to improve and to make more generally available the serologic tests, which are so important in syphilis control work. Tentative arrangements call for the presentation of the program in four sections.

The first section will consider the need for abherence to conventional technic in the routine performance of reliable serodiagnostic tests. This subject will be considered in papers by Drs. Harry Eagle, William A. Hinton, Reuben Kahn, Benjamin Kline, and John H. Kolmer, with special reference to the tests which each of these workers has described.

Need for training of laboratory personnel will be the subject of the second section. The qualifications and training for both laboratory directors and technicians will be presented in separate papers.

The third section will discuss the prosecution of the studies to evaluate the performance of serologic tests within the States. The efficiency of branch State laboratories and of municipal, hospital and private laboratories cannot be studied on a national basis. The subject is much too large. Should this be made a function of the State or large municipal department of health? Actual experience with such studies in the States of Maryland and New Jersey and in the City of Cleveland will be described.

The fourth section will consider the desirability of licensing or approving for the performance of serodiagnostic tests for syphilis, laboratories within the States by the respective State departments of health. This discussion will be conducted from the standpoint of the private laboratory director by Dr. Frederick H. Lamb of Davenport, Iowa. The health officer's side will be presented by Dr. A. Wadsworth, State Department of Health, Albany, New York.

A separate committee will draft recommendations for each of the four sections for presentation to the assembly. The respective chairmen of these four section meetings will be Drs. Walter M. Simpson, Dayton, Ohio, Arthur H. Sanford, Rochester, Minnesota, F. E. Senear, Chicago, Illinois, and H. H. Hazen, Washington, D. C. General discussion will follow the presentation of each set of recommendations.

An additional feature of the meeting will be an actual demonstration of the performance of the Eagle, Hinto, Kahn, Kline, and Kolmer tests by the originators of these procedures.

It is to be hoped that the attendance at this as-

sembly will be large. Out of the meeting should come a crystallization of opinion with regard to the important problems which will be considered. Those interested in obtaining further information should write to the Surgeon General, U. S. Public Health Service, Washington, D. C.

Public Health Statistics

I. C. RIGGIN, M. D.,

State Health Commissioner of Virginia.

The report of the State Health Department's bureau of communicable diseases, as compiled for the month of May, shows the following cases compared with the same month in 1937.

| | 1938 | 1937 |
|-----------------------------------|-------|-------|
| Typhoid and Paratyphoid | 14 | 34 |
| Diphtheria | 42 | 39 |
| Scarlet Fever | 78 | 62 |
| Measles | 1,609 | 2,560 |
| Meningitis | 12 | 42 |
| Poliomyelitis | 1 | 3 |
| Rocky Mountain Spotted Fever..... | 6 | 6 |
| Typhus Fever | 0 | 0 |

ROCKY MOUNTAIN SPOTTED FEVER

The advent of warm weather marks the appearance of the dog tick (*Dermacentor variabilis*), the principal vector of Rocky Mountain spotted fever in the eastern states. The recognition of this disease in Virginia was established less than ten years ago, but because of the lay publicity which it has received, its presence has caused no little concern in some areas of the State. Therefore, it has been thought wise to review briefly some of the features of this illness as it occurs in Virginia.

An average of approximately fifty cases per year of Rocky Mountain spotted fever is reported to the Virginia Department of Health. The disease has been confined principally to that area of the State which lies east of the Blue Ridge Mountains, with a few cases in the mountain area and only a rare occurrence in the western portion. The cases have occurred chiefly in the late spring and summer (May through September) corresponding to the months of greatest activity of the tick population.

The disease is most prevalent in rural dwellers, with farmers and members of their families comprising the majority of the cases. The group showing the next highest incidence are those whose occupa-

tion or pleasure takes them into tick infested woods or fields; foresters, hunters, campers and the like. All ages are attacked and sex is no factor aside from the greater risk of infection of males by virtue of their work.

The onset of the disease may be sudden but usually begins with a prodromal period of a few days in which general lassitude, fatigue, vague aches and pains and dull headache are experienced. This is followed by severe headache in the majority of cases, fever which rapidly rises to as high as 104°-105° in some cases, and occasionally one or more chills. Soreness and pain in the muscles are frequent and a definite stiffness of the neck and back is observed in a fair number of instances. Prostration may be marked and restlessness and insomnia are not infrequent. Delirium, disorientation, or coma may occur in the severe cases. Constipation frequently is observed, and occasionally abdominal tenderness. Bronchitis with scant to non-productive cough is common. The characteristic rash usually appears between the second and sixth day, and begins first on the ankles and wrists and spread centrally to the legs, arms, back, chest and occasionally to the face and scalp. The palms of the hands and soles of the feet may be involved. The rash is at first pink or brownish pink and macular in character, becoming more pronounced in color and, finally, definitely petechial in some cases. When well established, the rash may appear distinctly purple-red. Confluence of lesions has been reported and necrosis of the skin has been observed in severe cases.

The pulse usually is low in proportion to the temperature at the onset, but may become unusually fast, particularly in the terminal stages of the severe cases. The course of the disease usually extends over a two- to three-week period with the temperature subsiding by lysis.

The leukocyte count is of no particular value as an aid to diagnosis. An agglutination reaction with Proteus X2 and X19 is frequently exhibited by the patient's blood serum by the end of ten to fourteen days of the illness.

The case fatality rate observed in Virginia has been approximately twenty to twenty-five per cent. As in other acute infections, the rate is highest in very young children and older adults.

A definite history of tick bite can usually be elicited in about 50 per cent of the cases though the

exact date the bite occurred is not, as a rule, definitely established except in a few of the cases.

The diagnosis of Rocky Mountain spotted fever when a definite tick bite history is given and when the characteristic eruption has appeared is usually simple. The disease must be differentiated from endemic typhus, in which the rash begins centrally and spreads peripherally, in contrast to the peripheral origin of spotted fever. Typhus occurs most often in the colder months, and affects urban dwellers chiefly. Before the appearance of the rash, spotted fever may be mistaken for serebrospinal meningitis or poliomyelitis, because of the frequent occurrence of stiff neck and back and pain and soreness in the muscles. The presence of a slow pulse with high fever may erroneously suggest typhoid fever.

Prevention of Rocky Mountain spotted fever is concerned with (1) avoidance of areas known to be tick infested, (2) removal of ticks from body before they have become attached, (3) vaccination.

The use of clothing that will prevent ticks from gaining access to the body is advisable for those who must necessarily work in tick infested areas. A thorough examination of the body twice a day, at noon and upon retiring, is advisable even when protective clothing has been used. Particular attention should be given the hairy areas. Campers, hunters and other pleasure seekers should avoid old roads and paths with dense undergrowth and overhanging bushes. The best camp site is one where there is little or no low vegetation.

A specific vaccine prepared in the United States Public Health Service laboratories has proven of value in the prevention of Rocky Mountain spotted fever. The vaccine is prepared from the tissues of infected ticks and is given in two doses of 2 cc. each at five-day intervals. The immunity conferred is considered to last approximately one year. The use of this vaccine in Virginia has been confined principally to those persons whose occupation brings them into frequent contact with areas heavily infested with ticks. The vaccine is distributed to physicians upon request without charge. A small supply is kept in the Virginia Department of Health. The vaccine is of no value in the treatment of the disease, and its use for this purpose is ill-advised.

Woman's Auxiliary to the Medical Society of Virginia

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Treasurer—MRS. REUBEN F. SIMMS, 2502 Hawthorne Avenue, Richmond.

Chairman of Publicity—MRS. FRED J. WAMPLER, 4103 Forest Hill Avenue, Richmond.

Richmond Auxiliary.

On May 6 the Auxiliary to the Richmond Academy of Medicine, under the direction of the co-chairmen, Mrs. Lee Sutton, Jr. and Mrs. J. K. Hall, sponsored a card party in the Tea Rooms of Miller & Rhoads Department Store which was well attended and which netted the Auxiliary a substantial sum for its philanthropic work.

At a meeting of the Executive Committee on May 17, to take care of interim business, \$150.00 was sent the Crippled Children's Hospital to take care of our three beds there for the year, and \$36.50 to the State Fund for the T.B. bed at Blue Ridge Sanatorium. Our local contribution to this latter fund each year so far has been a memorial to Mary Gray Hodges. Mrs. Hodges was a past president of the local organization, helped to organize the State Auxiliary and was also a past president of this. She gave largely of time and energy to Auxiliary work and was always enthusiastic about its progress.

The chairmen of the standing committees serving Richmond this year are:

| | |
|---------------------|------------------------------|
| MEMBERSHIP | Mrs. J. K. Hall |
| PROGRAM | Mrs. J. B. Stone |
| PRESS AND PUBLICITY | Mrs. Fred J. Wampler |
| PHILANTHROPIC | Mrs. Lee Sutton, Jr. |
| SOCIAL | Mrs. Joseph Bear |
| PHONE | Mrs. Reuben F. Simms |
| HYGEIA | Mrs. Marshall P. Gordon, Jr. |

(Mrs. F. J.) REBECCA C. WAMPLER,
Chairman, Press and Publicity.

Periodic Health Examination.

"One out of six applications for life insurance is declined or postponed. The annual health audit will detect albumin or sugar, high blood pressure, slight cardiac disorder, incipient tuberculosis, be-

ginning neoplasm, and any and everything else. Your family physician will do the rest. Why does it profit a person to be an ostrich with his ailments, or like the Spartan youth, to hide a disease until it gnaws out his vitals? Get the disease before it gets you. Get it early. Get it before you think you have it.

"People have too long had such faith and confidence in their physician that they think he can cure anybody who has not been dead for over three days. The profession admires the faith of their clientele, but dislikes to be put in such superlative and unequal tests.

"If elevators are inspected regularly, why not one's mouth and teeth? If a boiler must be examined regularly, why not your heart and lungs? You have tested the brakes on your car, why not your kidney function? You have your watch regulated, but not your diet. You have your batteries charged but let your weight run down from disease.

"Should the most complex and wonderful machinery in the world, that is not made with hands, be allowed to become broken or impaired, to corrode or degenerate? Neglect your household if you must, neglect your bridge and golf if you can, neglect your husband if you dare, but don't neglect your physician and a yearly physical examination and health inventory on your birthday."

—*National Handbook.*

The above should be a bit of timely advice to all, but particularly to us as doctors' wives. We should make full use of the opportunity and privilege of keeping ourselves and our families healthy and thereby set a good example to our neighbors and the general public, as well as enjoy life to the fullest ourselves.

R. C. W.

Truth About Medicine

In addition to the articles previously enumerated the following have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association:

Chas. C. Haskell & Co., Inc.

Sulfanilamide Tablets, 5 grains.
Lederle Laboratories, Inc.

Antipneumococcic Serum Types V and VII (Lederle)
Refined and Concentrated.

Antipneumococcic Serum Types IV and VIII (Lederle)
Refined and Concentrated.

Eli Lilly & Co.

Ampoules Ephedrine Sulfate—Lilly, 1 cc., 0.025 Gm.
Parke, Davis & Co.

Theelin

Ampules Theelin Aqueous, 1 cc.

Ampules Theelin in Oil, 1 cc.

Vaginal Suppositories Theelin.

Theelol

Kapseals Theelol, 0.06 mg.

Kapseals Theelol, 0.12 mg.

New and Nonofficial Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Cevitamic Acid—P. D. & Co.—A brand of cevitamic acid—N. N. R. (New and Nonofficial Remedies, 1938, p. 480). It is supplied in the form of tablets, 25 mg. Parke, Davis & Co., Detroit, Mich.

Cheplin's Epinephrine Hydrochloride Solution (New and Nonofficial Remedies, 1938, p. 232), 1:1,000, 10 cc.—Marketed in rubber stoppered vials for parenteral administration. Cheplin Biological Laboratories, Syracuse, N. Y.

Cheplin's Epinephrine Hydrochloride Solution (New and Nonofficial Remedies, 1938, p. 232); 1:1,000, 30 cc.—Marketed in rubber stoppered vials for parenteral administration and in screw cap vials for topical administration. Cheplin Biological Laboratories, Syracuse, N. Y. (*J. A. M. A.*, May 28, 1938, p. 1837.)

Propaganda for Reform

Viosterol and Psoriasis.—Cedar and Zon (*Pub. Health Rep.* 52:1580 (November 5), 1937) administered massive doses of viosterol without local treatment of the lesions, dietary adjustment or any other therapeutic measure. A series of fifteen patients from thirty to fifty years of age with chronic widespread psoriasis were given from 300,000 to 400,000 units of vitamin D as viosterol. Eleven of the fifteen subjects showed complete involution of the psoriasis within six to twelve weeks' time. At the end of the period of treatment, three patients showed incipient symptoms of excessive vitamin D dosage. All the subjects exhibited an elevation in the level of blood calcium. There was a recurrence in some of the patients, though the degree of severity was much less than originally observed. Although the proposed treatment would appear to be safe, the authors suggest not only that there may be a smaller effective dose of viosterol but also that certain accompanying products of the irradiation of the ergosterol may be the potent factor. (*J. A. M. A.*, January 8, 1938, p. 133.)

Eleven Deaths From A Cancer Treatment.—In October, 1935, when the "Ensol" treatment was launched from Kingston, Ont., with what appeared to be carefully planned publicity in the newspapers, *The Journal* issued a warning to the effect that the product was being developed under uncontrolled conditions and that its exploitation would inevitably lead to grief for those concerned. Nevertheless a considerable number of doctors in various parts of the United States have used a product of this type in the treatment of cancer and it is obvious that one at least has

come to grief. It seems that the Biochemical Research Foundation of the Franklin Institute of Philadelphia prepared the product called **R** or Rex, which caused the deaths of eleven patients in Orlando, Fla. It seems likely that batch 152 was prepared on a Friday, some of it permitted to stand over Saturday and Sunday, and then sterilized on Monday. If the tetanus organism was present in the product it would have had two days in which to develop the toxin, so that when the product was sterilized on Monday a sufficient amount of tetanus toxin was present to cause death. These possibilities remain to be confirmed by more evidence—but certainly enough evidence is available to warrant the suggestion. At present there are being exploited to the American people a half dozen or more treatments of cancer that are in no way established as actually of value in the treatment of that condition. Enough is now known about the nature of cancer to indicate that the value of a cancer remedy cannot be established by sending it at random to physicians scattered all over the country, who use it in practice for a fee. The development, exploitation and promotion of "Ensol" and of its progeny "**R**" have been unscientific, unethical and unwarranted. (*J. A. M. A.*, April 9, 1938, p. 1194.)

Book Announcements

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia, which are available to our readers, the only cost being return postage:

- Abbott, M. E.—Atlas of Congenital Cardiac Disease.
Association for Research in Nervous and Mental Disease—
Pituitary Gland.
Barcroft, J.—The Brain and Its Environment.
Coward, K. H.—Biological Standardization of Vitamins.
De Kruif, P.—The Fight for Life.
Dobzhansky, T.—Genetics and the Origin of Species.
Hadfield, G. & Garrod, S. P.—Recent Advances in Pathology.
Hill, L. & Ellman, P.—Rheumatic Diseases.
History of the American Physiological Society.
Ölmsted, J. M. D.—Claude Bernard: Physiologist.
Taubert, H.—Enzyme Chemistry.
U. S. Army—Laboratory Methods of the U. S. Army.
Watson, L.—Hernia.

Manual of the Diseases of the Eye. For Students and General Practitioners. By CHARLES H. MAY,

M. D., Consulting Ophthalmologist to Bellevue, Mt. Sinai and French Hospitals, New York, etc. Fifteenth Edition Revised with the Assistance of CHARLES A. PERERA, M. D. Baltimore. William Wood and Company. 1937. Octavo of v-498 pages. With 376 Original Illustrations Including 25 Color Plates, with 78 Colored Figures. Cloth. Price, \$4.00.

The fifteenth edition is a thorough revision of this well known manual. In this Dr. May was assisted by Dr. C. A. Perera.

This volume has been brought up to date, with additions and improvements, but without increasing the size.

The chapters on the ocular manifestations of general disease and on the ophthalmoscope have been rewritten. Additions which have been incorporated include those dealing with dinitrophenol cataract, inclusion bodies, inclusion blennorrhoea, acetylcholine therapy, "floaters", gonioscopy, pontocaine, recumbent spectacles, and polaroid glass. Changes have been made in the descriptions of operations upon the lids and in those dealing with the newer operations for detachment of the retina.

P. W.

Information for Expectant Mothers. Metropolitan Life Insurance Company. New York. Copyright 1937. Pamphlet of 48 pages. This pamphlet and another "The Baby" may be obtained from the Metropolitan Life Insurance Company. Booklet Department 5-R-38, One Madison Avenue, New York City.

Hospital Service in the United States. 1938. Seventeenth Presentation of Hospital Statistics by the Council on Medical Education and Hospitals of the American Medical Association. The 1937 Census of Hospitals. Hospitals Registered by the American Medical Association. Reprinted from the Hospital Number of the *Journal of the American Medical Association*, March 25, 1938. Pamphlet of 93 pages. Price, 50 cents.

The Role of the Social Worker in a Prevention of Blindness Program. By LEWIS H. CARRIS, Managing Director, and ELEANOR BROWN MERRILL, Associate Director, National Society for the Prevention of Blindness. Publication 258. National Society for the Prevention of Blindness, New York, N. Y. Pamphlet of 8 pages. Price, 5 cents.

Glaucoma. By M. CARL WILENSKY, M. D., Assistant Professor of Ophthalmology, Tulane University, New Orleans, La. Publication 256. National Society for the Prevention of Blindness. New York, N. Y. Pamphlet of 16 pages. Price, 15 cents.

Virginia Medical Monthly

Founded by LONDON B. EDWARDS, M. D., April, 1874
 Owned by MEDICAL SOCIETY OF VIRGINIA since November, 1919
 WYNDHAM B. BLANTON, M. D., *Editor*
 AGNES V. EDWARDS, Richmond, *Business Manager*

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All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Monthly, 1200 East Clay Street, Richmond, Va.

This journal is not responsible for the opinions and statements of its contributors.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Subscription Price: \$2.00 per annum in advance. Single Copies 25c.

VOLUME 65

JULY, 1938

No. 7

Editorial

Why Our Papers Are Rejected.

There are probably few medical authors who have not had a paper rejected by the *Journal of the American Medical Association*. If any of them have, they may find the explanation in a useful and condensed hand book just off the press of the Association entitled "Medical Writing, the Technique and Art", by none other than the editor Morris Fishbein himself. It may be some comfort to know that three-fourths of all papers received by the *Journal of the A. M. A.* are rejected. The chief reason for this large number is lack of space. The number of original volunteered manuscripts which can be published yearly in the *Journal* varies between five hundred and six hundred. The number of manuscripts annually received by the *Journal* varies between two thousand and three thousand. When you send a paper to the *Journal*, all else being equal, you have a one in four chance of its being accepted. If the subject of the paper is one on which there is a plethora of material and has been recently over-worked, such as for example foci of infection, the author is very likely to have the manuscript returned in short order bearing one of the polite rejection sheets. If you are fond of mental gymnastics and produce a purely theoretical paper, the paper is usually returned with the suggestion that an ounce of fact is worth a ton of theory. If you have delivered an address before a medical society, it is apt to be prolix, wordy, and hastily assembled—per-

haps just a pot-boiler gotten together for reading rather than for printing. The fate of such a paper is likely to be the same. The editor thinks that "a manuscript that is fit to read is sometimes fit to print, but that a manuscript fit to print is always fit to read." Dr. Fishbein does not like long papers and he devotes a whole chapter of his book to showing how by careful revision most papers can be reduced by at least twenty-five per cent.

Medical Solecisms.

In one of his chapters Fishbein expatiates at length upon the barbarisms of medical writing, citing from actual papers that have been submitted for publication. The Editor of the *Journal of the American Medical Association* does not like for his contributors to describe patients who have "no temperature", or for doctors to "inject patients with a drug". He prefers to have them inject cadavers and to remember that the verb is transitive and requires an object. He does not wish us to say "a malignancy was removed" or to use abstract words in a concrete sense as "the cytology was normal", or "there was no pathology", or "surgery seemed the best treatment". He wishes us to remember that sphenoid and ethmoid are nouns and that their use as adjectives in the phrase "sphenoid and ethmoid sinuses" is not allowable. He does not like the "right heart" or "the left chest" or a "cardiac diet", because the adjective in each case modifies the wrong word. He

shudders a bit when the "patient has *an* anemia" and his discomfort is worse when per cent is used as a noun or when a surgeon says "I operated this patient". He won't allow a pathologist or those who quote him to report "autopsy findings" or "what was found at operation". He will allow "autopsy observations" or what was seen, noted, or observed at operation. The editor is supported by every dictionary in the English language when he objects to physicians reporting that a "patient developed a tumor". Nor will he allow a contributor to say he "took a biopsy". Instead he must say "he excised a specimen for biopsy". His editorial red pencil goes straight through "we", "I", and "the author" when used indiscriminately in the same article and he gets the creeps when a writer uses such overworked phrases as the "microscope showed", "throws light", "points out", and "symptom complex". He is averse to the superlatives "quite", "marked", and "great", and a copy in which the position of a previous or succeeding statement is referred to as "above" or "below" is certain to be blue penciled.

The Essence of a Good Medical Paper.

Fishbein's handbook should find a place on the desk of every medical author. In his chapter on style he enjoins simplicity and clearness. In his discussion of subject and material he gives admirable advice, particularly elaborating the preparation of the now much neglected case report. He discusses the detailed construction of the manuscript, title, words and phrases, spelling, capitalization, abbreviations, numbers, proper usage in the matter of pharmaceutical products and prescriptions, and how to secure a bibliography. With considerable detail he goes into the mechanical preparation of manuscripts, illustrations, charts, and tables. He concludes with emphasis upon the importance of revision,

telling us that Sir William Osler always made at least three drafts of a manuscript, Sir Clifford Albutt four, and Anatole France eight, but leading us to believe that he rather agrees with Trelease and Yule who recommend ten before submitting the result to the printer.

But for Our Tubules.

"For the formation of 1 cc of urine per minute, more than 100 cc. of fluid are separated from the blood—in this separated fluid are contained, in twenty-four hours, nearly one-half pound of glucose, or bicarbonate, and two pounds of salt."

In these words Alfred N. Richards recently summarized the astonishing results of glomerular filtration. By a simple calculation it is seen that the daily combined output of all the glomeruli amounts to approximately 100,000 cc. Expressed differently, if the human kidneys contained only glomeruli and nothing but this filtration process went on, the average individual would pass twenty-five gallons of urine a day. From this it is readily seen what an important function the tubules perform in reabsorption.

The fascinating story of the acquisition of knowledge concerning the function of the kidneys, which began with Bellini and Malpighi in the seventeenth century and reached an impasse in the general debate over the relative virtues of Bowman's and Ludwig's theories two hundred years later, has been steadily unfolded since 1921 through the epoch-making work of Richards and his collaborators. There remains yet much to be done not only in a study of the selective absorption and secretion activities of the cells of the various parts of the uriniferous tubules but in the effort to adapt these experimental findings in the frog and Necturi to the human kidneys.

Department of Clinical and Medical Education of the Medical Society of Virginia

Obstetrics and Gynecology.

During the month of June Dr. Shamburger has conducted a postgraduate course in the Valley of Virginia, holding meetings at Staunton, Harrisonburg, Woodstock, and Front Royal. A meeting

scheduled at Luray was discontinued due to poor attendance. Those attending at other points were:

STAUNTON

| | |
|-----------------------|-----------------------|
| Dr. Chas. Bickley Fox | Dr. Chas. Wm. Rodgers |
| Dr. M. J. Payne | Dr. Geo. Stone |
| Dr. W. C. Roller | |

HARRISONBURG

| | |
|----------------------|--------------------|
| Dr. Howard Armstrong | Dr. M. S. Foster |
| Dr. Ashby C. Byers | Dr. B. W. Nash |
| Dr. F. L. Byers | Dr. H. A. Stratton |
| Dr. J. J. Waff | |

WOODSTOCK

| | |
|--------------------|---------------------|
| Dr. F. C. Downey | Dr. E. L. Hopewell |
| Dr. David O. Foley | Dr. Harold Miller |
| Dr. R. C. Fravel | Dr. J. M. Winkfield |

FRONT ROYAL

| | |
|----------------------|----------------------|
| Dr. C. H. Armentrout | Dr. L. F. Hansbrough |
| Dr. O. W. Carper | Dr. J. McL. Jackson |
| Dr. E. L. Grubbs | Dr. D. M. Kipps |

Dr. Shamburger with the completion of this circuit finishes the service for which he was engaged by the Department of Clinical and Medical Education. Since his employment in July, 1936, he has conducted courses in Obstetrics and Gynecology in all sections of the State. His work has been highly satisfactory and pleasing to the doctors wherever he has been. We have been fortunate to have his services and extend our best wishes to him in his new work. In a future issue we plan to submit a summary of his valuable services to the doctors of the State.

Pediatrics.

On May 27, Dr. Hightower completed his circuit in the Mid-Tidewater section. The following doctors attended his course at the points indicated:

NEWPORT NEWS

| | |
|-----------------------|-----------------------|
| Dr. Wm. P. Dickerson | Dr. E. W. Buckingham |
| Dr. Ernest C. Downing | Dr. Paul Hogg |
| Dr. Floyd W. Green | Dr. C. P. Jones |
| Dr. R. A. B. Lloyd | Dr. Thomas C. Lawford |
| Dr. I. B. McEachin | Dr. J. W. Sayre |
| Dr. Russell E. Reed | Dr. T. D. Walker |
| Dr. A. T. Scott | |
| Dr. G. B. D. Stephens | |
| Dr. W. D. Young | |

WILLIAMSBURG

| | |
|---------------------|-------------------------------------|
| Dr. B. I. Bell | Dr. F. R. Person |
| Dr. C. E. Holdbery | Dr. Slemmons (Visitor from Harvard) |
| Dr. E. B. Kilby | Dr. Albert M. Sneed |
| Dr. T. E. Painter | Dr. J. R. Tucker |
| Dr. James R. Parker | |

NORFOLK

| | |
|----------------------|-------------------|
| Dr. A. H. Buck | Dr. G. H. Francis |
| Dr. S. T. Canaday | Dr. J. D. Jackson |
| Dr. C. R. S. Collins | Dr. S. I. Moore |

HAMPTON

| | |
|------------------------|------------------|
| Dr. Burl Bassette | Dr. H. D. Howe |
| Dr. Herbert T. Berwald | Dr. B. E. Hunt |
| Dr. A. C. Davis | Dr. P. J. Parker |
| Dr. Charles Faber | Dr. W. P. Smith |
| Dr. W. H. Howard | Dr. O. W. Ward |
| Dr. R. H. Wright, Jr. | |

In June Dr. Hightower has been engaged in conducting a course in the Clinch Valley area. Meetings are being held at Coeburn, Norton, Stonega, Appalachia, Pennington Gap, and Gate City. The interest and attendance in this area has been marked and much better than in the past. Arrangements are being made for a circuit in the northern part of the Clinch Valley following the present course.

Internal Medicine.

Plans are being made for a course in Internal Medicine to be conducted in the area of the South-western Virginia Medical Society during the latter part of July. Meetings will probably be held at Abingdon and Wytheville. The instructors for this course will come from the faculty of the University of Virginia Medical School. A similar course may be held in other sections upon the request of local societies.

GEO. B. ZEHMER,
Executive Secretary.

Proceedings of Societies

A Correction.

We regret that in the June issue of the MONTHLY, the new officers of the Roanoke Academy of Medicine were incorrectly stated. They should be: President, Dr. W. W. S. Butler; vice-presidents, Drs. L. G. Richards and C. A. Young; and secretary-treasurer, A. C. Davis.

Norfolk County Medical Society.

At the annual meeting of this Society in June, Dr. William B. Newcomb succeeded to the presidency, and Dr. Harvie S. Baker was named president-elect. Dr. Benjamin A. Doggett was elected vice-president and Dr. Lockburn B. Scott was re-elected secretary-treasurer for his twentieth successive year. All of-

ficers are of Norfolk. Delegates and alternates were also selected for the Danville meeting of the State Society.

At this meeting, Dr. Scott signified his intention of spending the summer on a visit to his daughters in Winnipeg, Canada, and asked that Dr. A. Brownley Foster be appointed acting secretary-treasurer for the period of his absence, which request was granted. Dr. Scott will return in September.

Charlotte County Medical Society.

At a recent meeting of this Society, the following officers were elected: President, Dr. C. M. Nicholson, Charlotte C. H.; vice-president, Dr. J. B. Bailey, Keysville; and secretary, Dr. R. B. Cralle, Drakes Branch.

Hanover County Medical Society.

At a meeting of this Society, the latter part of May, the following officers were elected: President, Dr. Hawes Campbell, Jr., Hanover; vice-president, Dr. Edwin Vaughan, Ashland; and secretary-treasurer, Dr. Frank L. Hughes, Ashland. Drs. Edwin Vaughan, I. K. Redd, and T. E. Stanley were named as a committee to work up details for hospitalization of Hanover indigents.

The Lynchburg Academy of Medicine

Held its regular monthly meeting, June 6, with Dr. Sam Oglesby, vice-president, presiding. Delegates and alternates to the State Society meeting in Danville were elected. Dr. J. Shelton Horsley, Richmond, presented a paper on "Carcinoma of the Stomach", accompanied with case records and lantern slides.

The next meeting of the Academy will be held in September.

The Fourth District Medical Society

Held its annual meeting in Blackstone, May 24. Dr. C. V. Montgomery, South Hill, was elected president, succeeding Dr. J. L. Hamner, Mannboro. Other officers are: vice-presidents, Dr. C. G. O'Brien, Appomattox and Dr. N. P. Snead, Cartersville; secretary-treasurer, Dr. C. E. Martin (re-elected), Emporia; and Dr. Wright Clarkson, Petersburg, chairman of the steering committee. The standing committees were re-appointed. Dr. William Feild, Petersburg, was elected to membership.

Dr. W. B. McIlwaine, Petersburg, was nominated to the State Society, to succeed the late Dr. Fletcher Wright, Sr., as representative of the fourth district

on the State Board of Medical Examiners, this nomination to be presented to the House of Delegates at its next meeting.

The Medical Association of the Valley of Virginia

Held its regular meeting on May 26 in Harrisonburg, under the presidency of Dr. R. P. Bell, of Staunton. The following program was presented: The Present Status of Coronary Disease by Dr. B. S. Yancey, Harrisonburg; The Relation Between Prenatal Care and Obstetrical Mortality by Dr. L. M. Allen, Winchester; Fractures of the Neck of the Femur by Dr. R. V. Funsten, University; Mesenteric Adenitis by Dr. J. M. Emmett, Clifton Forge; and Sulfanilamide with report of the Treatment of a Case of Puerperal Septicemia by Dr. Alex F. Robertson, Jr., Staunton.

The Southside Virginia Medical Association

Held its regular quarterly meeting at the Central State Hospital, Petersburg, on June 14. Dr. W. J. Ozlin, South Hill, is president, and Dr. R. L. Rairford, Franklin, secretary. The following program was presented: Dr. Herbert C. Jones, Petersburg, "A Presentation of Urological Cases"; Dr. Roy K. Flannagan, Richmond, "Pioneering in Health 1908-1910"; Dr. J. S. Horsley, Jr., Richmond, "Peritonitis Treated with Sulfanilamide"; Dr. James Asa Shield, Richmond, "Insulin Therapy in Mental Diseases"; and Dr. Meade Edmunds, Petersburg, "Ocular Manifestations of Vitamin Deficiency." Dr. J. Bolling Jones of Petersburg reported an interesting case of Traumatic Pneumothorax from an automobile accident.

A business session was held following the scientific program, and the meeting was closed with a dinner tendered by Dr. Henry and his staff at the hospital.

The Staunton Academy of Medicine,

At its meeting on May 24, elected the following new officers: President, Dr. Joseph Alexander; vice-president, Dr. Guy R. Fisher; and secretary-treasurer, Dr. Charles W. Putney.

The Academy recommended to the City of Staunton that they renew their efforts to obtain an appropriation from the proper authorities for enclosing the sewage system and establishing a satisfactory sewage disposal plant.

The Virginia, Maryland and District of Columbia Medical Society

Held its semi-annual meeting at the Manor Club, Norbeck, Md., on May 25, under the presidency of Dr. James Gannon, Washington. Among those presenting papers were Drs. W. Calhoun Stirling, W. Dabney Jarman, Tomas Cajigas, Robert Sterling

McGrath, Edward M. Pickford, and Daniel D. V. Stuart, Jr, all of Washington, and Dr. William O. Bailey, Leesburg.

At the business meeting, Dr. M. B. Hiden, Warrenton, was unanimously elected president for the coming year

News Notes

Commencement Exercises of Virginia Medical Schools.

MEDICAL COLLEGE OF VIRGINIA

The Centennial Session of the Commencement exercises of the Medical College of Virginia were held June 4 to 7. The functions were opened with the student night dance at the John Marshall Hotel. On Sunday, the commencement sermon was given by the Right Reverend Beverley D. Tucker, D. D., Rector of St. Paul's Church.

Alumni registration began on Monday, and more than two hundred attended the business meeting and luncheon. The annual banquet was held that night, with Dr. R. W. Miller, president, presiding. The following officers were elected for the ensuing year: president, Dr. F. P. Fletcher, Richmond; vice-presidents, Dr. Meade Edmunds, Petersburg; Dr. A. M. Wash, Richmond; Mr. D. D. Gray, Sr., Norfolk; and treasurer, Dr. T. Dewey Davis, Richmond.

The Centennial Program was held at St. Paul's Church on Tuesday, the 7th. One hundred and thirty delegates, representing as many universities and organizations throughout the country, were in the academic procession, which comprised three hundred and fifty persons. The principal address was given by Dr. Henry A. Christian, Hersey Professor of the Theory and Practice of Physic, Harvard University Medical School, Boston. Following this meeting, a buffet luncheon was served the Board of Visitors, Centennial Delegates, Alumni, Faculty, and Senior Classes.

The final exercises were held at the Mosque, with the Commencement address being made by James Rion McKissick, President of the University of South Carolina. The Honorary degree of Doctor of Science was conferred upon Dr. James Carroll Flip-pin, Dean of the Medical School of the University of Virginia.

There were one hundred and thirty-nine graduates from the four schools of the college—seventy-six in medicine, sixteen in dentistry, twenty-one in pharmacy, and twenty-six in nursing. Thirty graduates received commissions in the Officers' Reserve Corps—twenty-one in the Medical Corps and nine in the Dental Corps.

Following are the graduates in medicine, with hospital appointments:

HOSPITAL DIVISION, MEDICAL COLLEGE OF VIRGINIA, RICHMOND—Drs. Ernest Linwood Bagby, Richmond; Hubert Dinwiddie Crow, Richmond; James Thomas Gill, Richmond; Gordon Douglas Hall, Dumbarton; Thomas Holt, Warrenton, N. C.; John Tallman Jarrett, Dunbar, W. Va.; William Herbert McCall, Richmond; Paul James Nutter, Clarksburg, W. Va.; and Marvin Everett McRae, Richmond.

STUART CIRCLE HOSPITAL, RICHMOND—Drs. Robert Franklin Bell, Butte, Mont.; Henkel Moser Price, Richmond; William Parker Terry, Burkeville; and George Harrison Williams, Petersburg.

ST. LUKE'S HOSPITAL, RICHMOND—Drs. Edwin Clinton Bryce, II, Richmond; Garland Dyches, Buf-falo Ridge; and Hazael Joseph Williams, Richmond.

JOHNSTON-WILLIS HOSPITAL, RICHMOND—Drs. William Henry Copley, Richmond; George Simeon Fultz, Jr., Butterworth; and Carl Scott Lingamfelter, Dumbarton.

UNIVERSITY OF VIRGINIA HOSPITAL, CHARLOTTESVILLE—Dr. Bathurst Browne Bagby, Jr., Richmond.

ST. VINCENT'S HOSPITAL, NORFOLK—Dr. Ralph Boyd Blowe, Boykins.

NORFOLK GENERAL HOSPITAL, NORFOLK—Dr. William Hart Woodson, Newport News.

LEWIS-GALE HOSPITAL, ROANOKE—Drs. Earle Bailey Morgan, Dublin; and Darwin Elbert Smith, Richmond.

ELIZABETH BUXTON HOSPITAL, NEWPORT NEWS—Dr. Claudio Rodriguez Arce, Alajuela, Costa Rico.

CHARLESTON GENERAL HOSPITAL, CHARLESTON, W. VA.—Drs. Julius Lyons Berkley, Charleston, W. Va.; Howard Dewey Booth, Clendenin, W. Va.; Samuel Stuart DuPuy, Beckley, W. Va.; and James Eugene Grace, Morgantown, W. Va.

CHESAPEAKE AND OHIO HOSPITAL, HUNTINGTON, W. VA.—Drs. Robert Morris Ferrell, Lewisburg, W. Va.; Liskie Jay Moore, Parkersburg, W. Va.; and John Franklin Morris, Huntington, W. Va.

OHIO VALLEY GENERAL HOSPITAL, WHEELING, W. VA.—Drs. Jacob Camden Huffman, Webster Springs, W. Va.; and Herbert Grayson Ruffin, Richmond.

HINTON HOSPITAL, HINTON, W. VA.—Dr. Albert William Holmes, Lowell, W. Va.

HIGHSMITH HOSPITAL, FAYETTEVILLE, N. C.—Dr. David Melvin Cogdell, Fayetteville, N. C.

CITY MEMORIAL HOSPITAL, WINSTON-SALEM, N. C.—Dr. Will Hardee Lassiter, Jr., Smithfield, N. C.

JAMES WALKER MEMORIAL HOSPITAL, WILMINGTON, N. C.—Dr. Walter Glenn Lewis, Elon College, N. C.

REX HOSPITAL, RALEIGH, N. C.—Drs. Marvin Bailey Poole, Raleigh, N. C.; Jack Gregory Tillery, Halifax, N. C.; and Annie Louise Wilkerson, Raleigh, N. C.

CONEMAUGH VALLEY MEMORIAL HOSPITAL, JOHNSTOWN, PA.—Dr. Leon J. Anson, Bronx, N. Y.

PHILADELPHIA GENERAL HOSPITAL, PHILADELPHIA, PA.—Dr. Earl Shelbourne Scott, Welch, W. Va.

EPISCOPAL HOSPITAL, PHILADELPHIA, PA.—Dr. Edward George Sharp, Philadelphia, Pa.

QUEEN'S GENERAL HOSPITAL, JAMAICA, L. I., N. Y.—Dr. Russell Neff Carrier, Richmond.

NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL, NEW YORK, N. Y.—Dr. Charles Fleetwood James, Jr., Appomattox.

CONEY ISLAND HOSPITAL, BROOKLYN, N. Y.—Dr. Sydney Loeb Lang, Brooklyn, N. Y.

JOHNS HOPKINS HOSPITAL, BALTIMORE, MD.—Dr. Haye Woodrow Caldwell, Athens, W. Va.

U. S. MARINE HOSPITAL, NORFOLK—Drs. Phillips Lester Claud, Portsmouth; and Norman Elwood King, Haynesville.

U. S. MARINE HOSPITAL, BALTIMORE, MD.—Dr. Albert John Russo, Wilkes-Barre, Pa.

GALLINGER MUNICIPAL HOSPITAL, WASHINGTON, D. C.—Dr. Albert Anthony Kossove, New York, N. Y.

CITY HOSPITAL, CLEVELAND, OHIO—Dr. Evelyn Mary Ball, Huntington, W. Va.

BOSTON CITY HOSPITAL, BOSTON, MASS.—Drs. Archie Arthur Hoffman, Chelsea, Mass.; and William Taliaferro Thompson, Jr., Richmond.

PETER BENT BRIGHAM HOSPITAL, BOSTON, MASS.—Dr. Sidney Grey Page, Jr., Richmond.

DUVAL COUNTY HOSPITAL, JACKSONVILLE, FLA.—Dr. Raymond Scrivener Blackman, Vienna.

TAMPA MUNICIPAL HOSPITAL, TAMPA, FLA.—Dr. Ira Chenault Evans, Winchester, Ky.

NASHVILLE GENERAL HOSPITAL, NASHVILLE, TENN.—Dr. John Washington Clark, Washington.

BARONESS ERLANGER HOSPITAL, CHATANOOGA, TENN.—Drs. Howard Garnett Snead, Tappahannock; and Paul Clarence Soulsby, Pratt, W. Va.

HILLMAN HOSPITAL, BIRMINGHAM, ALA.—Dr. Julius Frederick Chairsell, Jr., Richmond.

RECEIVING HOSPITAL, DETROIT, MICH.—Dr. Alexander Miller Earle, Jr., Stovall, N. C.

HENRY FORD HOSPITAL, DETROIT, MICH.—Dr. Eugene Orwin Wright, Clarksburg, W. Va.

JERSEY CITY MEDICAL CENTER, JERSEY CITY, N. J.—Dr. Stanley John Fink, Philadelphia, Pa.

NEWARK CITY HOSPITAL, NEWARK, N. J.—Dr. Otto Selick Steinreich, Newark, N. J.

BARNERT MEMORIAL HOSPITAL, PATERSON, N. J.—Dr. Margaret Brinkerhoff Williams, Paterson, N. J.

NEW BRITAIN HOSPITAL, NEW BRITAIN, CONN.—Dr. Myer Goldschmidt, Hartford, Conn.

STATE OF WISCONSIN GENERAL HOSPITAL, MADISON, WIS.—Drs. Edward Ellis Haddock, Richmond; and Gilman Rackley Tyler, Richmond.

ST. JOSEPH HOSPITAL, LEXINGTON, KY.—Dr. Woodrow Wilson Scott, Williamson, W. Va.

PRESBYTERIAN HOSPITAL, SAN JUAN, PUERTO RICO—Dr. Jose William Dwight Santiago, Mayaguez, P. R.

Others receiving their medical degrees are:

Dr. Ina Clair Hall, Charleston, W. Va.

Dr. Jack Nichols, Los Angeles, Calif.

Dr. George Robert Rosenbaum, Richmond.

Dr. Irving Murray Schor, Brooklyn, N. Y.

UNIVERSITY OF VIRGINIA

The Department of Medicine of the University held its final exercises in conjunction with those of other departments of the University on June 13, 14 and 15. An outstanding feature of this year's exercises was the one hundredth anniversary of the Alumni Association, this having been organized in 1838 at the close of the fourteenth session of the University. On Alumni day, the Thomas Jefferson Society of Patriarchs was organized with all alumni who were students of the University fifty years ago becoming charter members. Dr. Paul B. Barringer of Charlottesville was named grand patriarch of the new group. Dr. Carrington Williams of Richmond was elected vice-president of the Alumni Society.

The usual social events in connection with Commencement were enjoyed and the new library was dedicated as a memorial to the late Dr. Edwin A. Alderman, former president of the University.

Names of the fifty-six graduates of the Department of Medicine with their hospital appointments follow:

UNIVERSITY OF VIRGINIA HOSPITAL, UNIVERSITY—Drs. DuPont Guerry, III, Greenville, S. C.; Charles Johnston Harkrader, Bristol; Leslie Mac Lisle, Jr., Columbus, Ohio; Philip Pendleton Steptoe, Jr., Shepherdstown, W. Va.; and Robert Hamilton Williams, Olympia, Wash.

UNIVERSITY OF VIRGINIA, DEPARTMENT OF MEDICINE, UNIVERSITY—Dr. Orville Russell Kelley, University.

ST. ELIZABETH'S HOSPITAL, RICHMOND—Drs. Elton Meredith Alrich, Fredericksburg; and Frederick Gaston Woodson, Covington.

MEMORIAL HOSPITAL, RICHMOND—Dr. James Garnett Willis, Remington.

RETREAT FOR THE SICK, RICHMOND—Dr. Edwin Burwell Jones Whitmore, Jr., Petersburg.

ROANOKE CITY HOSPITAL, ROANOKE—Dr. Octavius Lake Huffman, Jr., University.

NORFOLK GENERAL HOSPITAL, NORFOLK—Dr. Joseph Lee Mann, Hampton.

VIRGINIA MASON CLINIC, SEATTLE, WASH.—Drs. John Daniel Call, Richmond; and Jacob Grant Hebble, Newport News.

CLEVELAND CITY HOSPITAL, CLEVELAND, OHIO—Drs. Elizabeth Virdin Barnes, Ivy Depot; and Benjamin Calloway Jones, Jr., Huntington, W. Va.

CINCINNATI GENERAL HOSPITAL, CINCINNATI,

OHIO—Drs. William Thomas Moore, Blackridge; and Charles Thomas Nicholson, Jr., Alexandria.

FIFTH AVENUE HOSPITAL, NEW YORK, N. Y.—Dr. Edward Gordon Bell, Jr., Bronxville, N. Y.

RICKERS ISLAND HOSPITAL, NEW YORK, N. Y.—Dr. Charles Nichols Romaine, Jr., Petersburg.

BELLEVUE HOSPITAL, NEW YORK, N. Y.—Dr. John Kirk Train, Jr., Savannah, Ga.

CONEY ISLAND HOSPITAL, BROOKLYN, N. Y.—Dr. Malcolm Foote Sher, New York, N. Y.

LONG ISLAND COLLEGE HOSPITAL, BROOKLYN, N. Y.—Dr. George Henry Stollwerck, University.

STRONG MEMORIAL HOSPITAL, ROCHESTER, N. Y.—Dr. James Bell Black, Jr., Red Springs, N. C.

UNION MEMORIAL HOSPITAL, BALTIMORE, MD.—Drs. Richard Phillips Bell, Jr., Staunton; Thomas Jackson Humphries, Culpeper; and Maynard Putney Smith, Farmville.

U. S. MARINE HOSPITAL, BALTIMORE, MD.—Drs. Murray Cox Brown, Richmond; and Edward Worthington Venning, University.

JOHNS HOPKINS HOSPITAL, BALTIMORE, MD.—Drs. Dabney von Knobloch Moon, Charlottesville; and Charles Lemuel Prince, III, Cheraw, S. C.

SINAI HOSPITAL, BALTIMORE, MD.—Dr. Albert George Schurman, Roanoke.

ST. LUKE'S HOSPITAL, BETHLEHEM, PA.—Dr. Belton Allen Bennett, Jr., Greer, S. C.

ST. FRANCIS HOSPITAL, PITTSBURGH, PA.—Drs. Joseph Coudon, VI, Wheeling, W. Va.; Ivor David Harris, New Philadelphia, Ohio; and William Alfred Mitchell, Newport News.

LANKENAU HOSPITAL, PHILADELPHIA, PA.—Dr. Reverdy Hamlin Jones, Jr., Portsmouth.

WOMAN'S HOSPITAL OF PHILADELPHIA, PHILADELPHIA, PA.—Dr. Charlotte Ellen Swaney, East Radford.

UNIVERSITY OF PENNSYLVANIA HOSPITAL, PHILADELPHIA, PA.—Dr. George Nelms Wise, Jr., Hampton.

ALLENTOWN GENERAL HOSPITAL, ALLENTOWN, PA.—Dr. Lewis Fulton Sprague, Allentown, Pa.

MUHLBERG HOSPITAL, PLAINFIELD, N. J.—Dr. Charles Nuckols Davidson, Nuckols.

ORANGE MEMORIAL HOSPITAL, ORANGE, N. J.—Dr. Robert Bradford Orr, Asheville, N. C.

WILMINGTON GENERAL HOSPITAL, WILMINGTON, DEL.—Dr. Herbert William Fink, Norfolk.

DELAWARE HOSPITAL, WILMINGTON, DEL.—Dr. Joseph Parker Griffin, Portsmouth.

WATTS MEMORIAL HOSPITAL, DURHAM, N. C.—Dr. John Hill Fitzgerald, Jr., Crewe.

NORWOOD HOSPITAL, BIRMINGHAM, ALA.—Dr. John Ferguson Gayle, Newport News.

EMERGENCY HOSPITAL, WASHINGTON, D. C.—Dr. Joseph Harvey Harris, Brooklyn, N. Y.

DUVAL COUNTY HOSPITAL, JACKSONVILLE, FLA.—Dr. John Harrell Hill, Charlottesville.

TOURO INFIRMARY, NEW ORLEANS, LA.—Dr. John Randolph Kight, Norfolk.

WOMAN'S AND CHILDREN'S HOSPITAL, CHICAGO, ILL.—Dr. Jessie Dinsmore Marsh, Lynchburg.

UNIVERSITY HOSPITAL, IOWA CITY, IA.—Dr. Charles Augustus Mella, Jr., West New York, N. J.

HARPER HOSPITAL, DETROIT, MICH.—Dr. William Shepherd Smith, Catonsville, Md.

ROPER HOSPITAL, CHARLESTON, S. C.—Dr. Horace Gilbert Smithy, Berryville.

ROYAL VICTORIA HOSPITAL, MONTREAL, CANADA—Dr. Francis Record Whitehouse, Lynchburg.

U. S. NAVAL HOSPITAL—Drs. John Burton MacGregor, Afton; and George Leroy Tabor, Jr., Cherrydale.

Advisory Board to Woman's Auxiliary.

Dr. G. F. Simpson, President, has appointed Dr. P. St. L. Moncure of Norfolk as chairman of the Advisory Board to the Woman's Auxiliary of the Medical Society of Virginia, succeeding Dr. Fletcher J. Wright who died recently. He has also named Dr. Frederick Gochnauer of Upperville as a new member of this Committee. Dr. James B. Stone of Richmond is the third member.

Have you Named your Delegates and Alternates to the State Meeting?

Component societies of the Medical Society of Virginia have been asked to report to headquarters office names of their delegates and alternates for the Danville meeting of the State Society. It will be appreciated if those who have not already done so will give this matter their attention promptly.

The Southwestern Virginia Medical Society, in sending their names stated that they allow a flat sum of \$10.00 to delegates who attend the State meeting and furnish their secretary a report of the transactions of the House of Delegates. Might not this suggestion increase representation?

Married.

Dr. Louis Philip Bailey of Nathalie and Miss Telia Barner Barksdale of Sutherlin, June 18.

Dr. James Thomas Tucker of Richmond and Miss Katharine Vinyard Huff of Roanoke, June 15.

Dr. William Stone Burton, class of '37, Medical College of Virginia, now of Powhatan, and Miss Dorothy Boyd Archer of Petersburg, in June.

Dr. Homer Earle Ferguson of Richmond and Miss Audrey Bryan Tulloh of Mineral, June 3. Dr. Ferguson graduated from the Medical College of Virginia in 1936 and, after an internship at Grace Hospital this city, located in Richmond for practice.

Dr. James Thomas Gill, of the class of '38, Medical College of Virginia and a son of Dr. and Mrs. Thos. F. Gill of Richmond, to Miss Mary Dinwiddie Crow also of this city, June 25.

Dr. William Garland Talmage of Succasunna, N. J., and Miss Anne Radford Trott of Staunton, May 27. Dr. Talmage is an alumnus of the Medical College of Virginia, class of '31.

Dr. DuPont Guerry, III, class of '38, University of Virginia, Department of Medicine, and Miss Sallie Kennon Williams of Lynchburg, June 14. Dr. Guerry has just received an appointment for internship at the University Hospital.

Personnel News from State Health Department.

Dr. Lonsdale J. Roper, formerly an associate director of the Division of Venereal Disease Control, has been appointed director of the Bureau of Rural Health, and assumed his duties on June 7.

Dr. Edgar C. Harper, director of the Crippled Children's Bureau, in addition to his duties in that capacity, has assumed the supervision of the Department's Tuberculosis Out-Patient Service. This activity formerly was administered jointly by the Bureau of Rural Health and the Bureau of Public Health Nursing.

Dr. G. R. Carpenter, who had been temporarily in charge of the Washington, Bristol City Health Department during the absence of Dr. M. I. Shanholtz, has been appointed health officer of the Dickenson-Scott-Wise Health District, succeeding Dr. J. R. Massie who resigned. The office for this district is located at Norton.

Dr. Charles L. Savage, who has returned from post-graduate study at Johns Hopkins School of Hygiene and Public Health, has been appointed director of the Hanover County Health Department, with headquarters at Ashand.

In the Peninsula Health District, Dr. J. B. Porterfield has resumed direction at Williamsburg. This district had been under the supervision of Dr. C. L. Riley during Dr. Porterfield's absence while he was pursuing advanced study at Johns Hopkins.

Dr. C. L. Riley has become head of Prince William County Health Department with headquarters at Manassas. Dr. William Y. Garrett has been designated assistant health officer for that district.

Dr. Linwood Farley has been re-appointed assistant health officer of the Valley Health District with headquarters at Luray. Dr. Farley for several months had been acting health officer of Hanover County Health Department.

In the Washington-Bristol City Health Department, Dr. M. I. Shanholtz, having recently completed his post-graduate work at Johns Hopkins, has been re-appointed director, with headquarters at Bristol.

American Medical Association.

As we go to press, we learn that Dr. Irvin Abell, prominent physician of Louisville, Ky., succeeded to the presidency, and Dr. Rock Sleyster, Wauwatosa, Wis., was named president-elect of the American Medical Association. Dr. Sleyster has always taken an active part in the work of the A. M. A. and was recently chairman of the Board of Trustees.

St. Louis was named as the 1939 convention city.

Medical Society of the District of Columbia.

At the annual meeting of this Society in May, Dr. William J. Mallory was inducted into office as president, and the following were elected for the coming year: President-elect, Dr. John H. Lyons; vice-presidents, Dr. William T. Gill, Jr., and Dr. David Davis; and Dr. Coursen B. Conklin was re-elected secretary. All officers are of Washington.

Coroner of Lynchburg.

Dr. James A. Wilkins has been appointed coroner for the City of Lynchburg, succeeding Dr. J. Burton Nowlin who served in that office for twenty-one years.

Doctors to Serve Hopewell.

In the June elections, both Dr. D. Lane Elder and Dr. S. B. Perry of Hopewell were elected members of the City Council of that place for another term.

Dr. J. F. Phillips,

Recently of Deltaville, is now on the medical staff of the Central State Hospital, Petersburg.

American Psychiatric Association.

At the meeting of this Association, held in San Francisco, June 6-10, Dr. Richard H. Hutchings, Utica, N. Y., succeeded to the presidency; Dr. William C. Sandy, Harrisburg, Pa., was named president-elect, and Dr. Arthur H. Ruggles, Providence, R. I., secretary-treasurer.

"The Doctor" Now in a Permanent Home.

The \$150,000 reproduction of the Sir Luke Fildes masterpiece "The Doctor" first shown by the Petro-lagar Laboratories at Chicago's Century of Progress Exposition in 1933, was recently presented by its owners to the new Rosenwald Museum of Science and Industry in that city.

Following the two World's Fairs, "The Doctor" Exhibit went on a tour of 50,000 miles and was viewed by over five million people in eighteen principal cities throughout the country.

Designed to remind the public of the importance of the family physician, it required the full time of the late Chicago sculptor, John Paulding and the noted artist Rudolph Ingerle and a large corps of assistants, and took nearly a year to complete.

In its new location in the Rosenwald Museum it will be seen by millions of visitors annually.

Dr. F. E. Steere

Was elected a member of the town Council of Claremont at the elections in June.

Dr. Howard T. Holden,

Class of '34, University of Virginia, Department of Medicine, returned to the University Hospital on July 1, where he will be connected with the Eye, Ear, Nose and Throat Department for two years.

The American Gynecological Society

Held its annual meeting at Grove Park Inn, Asheville, N. C., May 30, 31 and June 1, under the presidency of Dr. N. Sproat Heaney of Chicago. At the business session, Dr. Frederick C. Holden of New York City was elected president, and Dr. Richard W. Te Linde of Baltimore was re-elected secretary. This organization has a limited membership and Dr. M. P. Rucker of Richmond is the only member from this State.

Miss Helen Frances Ziegler,

Dean of the School of Nursing of the Medical College of Virginia, has accepted an appointment as dean of the School of Nursing at Vanderbilt Uni-

versity, Nashville, Tenn., and will assume her new duties on September 1. Miss Ziegler has been with the Medical College of Virginia for nine years.

Doctors Honored at Randolph-Macon College.

At the commencement exercises of Randolph-Macon College, Dr. M. Pierce Rucker, Richmond, was awarded the degree of doctor of laws.

Dr. Howard R. Masters, also of Richmond, was named a member of the advisory committee of the alumni association.

Dr. Oswald Weaver,

Recently of Charlottesville, has been appointed to the staff of the State Colony for Epileptics and Feeble-minded, succeeding Dr. W. V. Kelly. He is a graduate of the medical school of the University of Virginia, class of '36.

Dr. John H. Miller,

Class of '32, Medical College of Virginia, formerly of Thomas, W. Va., recently completed a two-year resident internship at the New York Post-Graduate Hospital in New York City, and is now on a year's fellowship at the New York Vascular Clinic under Dr. Irving Wright.

Dr. J. Gordon Rennie,

Recently associated with Dr. M. E. Nuckols, in Richmond, has gone to Bluefield, W. Va., where, beginning July 1, he will be associated with Dr. Charles M. Scott at St. Luke's Hospital, in the practice of proctology and surgery.

New York Polyclinic Medical School and Hospital Announces Appointments.

Dr. Joseph F. McCarthy has been appointed professor of urology and attending urologist; Dr. Charles J. Imperatori, professor of otolaryngology and attending otolaryngologist; Dr. Joseph E. J. King, professor of neuro-surgery and attending neuro-surgeon; and Dr. Edward H. Donnon, professor of obstetrics and attending obstetrician.

Dr. Athey Ragan Lutz,

Formerly of Huntington, W. Va., announces the opening of his offices at 1044 Market Street, Parkersburg, W. Va., where his practice will be limited to orthopedic surgery and fractures. Dr. Lutz, class of '27, Medical College of Virginia, is a fellow of the American Academy of Orthopedic Surgery.

The Jefferson Medical College.

The One Hundred and Thirteenth Commencement of the College was held on June 3. The graduating class numbered 134, bringing the total number of graduates to 16,447. Thirty-four members of this class were commissioned as First Lieutenants in the Medical Section of the Officers' Reserve Corps.

The annual Alumni dinner was held on June 2, with 527 alumni in attendance, and Alumni Day and Ex-Internes' Day clinics were held on the 1 and 2.

The Graduating Class of 1938 presented a portrait of Dr. Brooke M. Anspach, Professor of Gynecology, to the College, and also a plaque, commemorating the services of the late Dr. Burns.

Dr. J. Torrance Rugh, who, for twenty years, held the chair of Orthopedic Surgery, retired at the end of the present session, and was elected Emeritus Professor of Orthopedic Surgery in the College and Consulting Orthopedic Surgeon to the Hospital.

Surgical Club in Norfolk.

An informal surgical club was formed in Norfolk, this year, and on May 5, the first annual banquet was held at the Town Club.

The meetings are characterized by round table discussions, a different member heading the discussion at each of the meetings, which are held in the Norfolk County Medical Society Library at eight p. m., on the first Thursday of each month, from October to June, inclusive. The subjects for the past year have been: Significance and interpretation of symptoms in upper abdominal surgery by Dr. Robert DuVal Jones; Fracture problems by Dr. Allen S. Lloyd; Endocrines in gynecology by Dr. Eugene Lowenberg; Low cervical Caesarian section by Dr. Richard B. Nicholls; Esophageal stricture and cardiospasm by Drs C. C. Cooley and A. A. Burke; Drainage in abdominal surgery by Dr. R. D. Glasser; Healing of tissues by Dr. M. H. Todd; Cancer of the breast by Dr. N. F. Rodman; Congenital anomalies of the female genital tract by Dr. Horace Ashburn; and Surgery of the biliary tract with particular reference to drainage of the common duct by Dr. C. C. Smith.

The following are the officers of the Club: President, Dr. Charles Lupton; Vice-president, Dr. C. J. Devine; and Secretary-treasurer, Dr. Allen S. Lloyd. Other members are: Drs. Ashburn, Burke, Crosby, Doggett, Glasser, DuVal Jones, Lowenberg, Mat-

thews, Nicholls, Peake, Rodman, Rogers, C. C. Smith, Spigel, Todd, Eley, Strauss, Motyca, Angus Wilson, Wallace, M. S. Andrews, Duncan, Collins, Cooley, Byrd, and Morgan. The following are honorary members in this Club: Drs. C. J. Andrews, Charles Doughtie, Stanley Graves, Lomax Gwathmey, P. St. L. Moncure, Levi Old, R. L. Payne, Julian Rawls, Frank Smart, and Foy Vann.

Dr. J. E. Hamner,

Of Petersburg, has been named first vice-commander of Petersburg Post No. 2, American Legion, election of new officers being effective on July 22.

Drs. Michaux and Graham.

Dr. Stuart Michaux and Dr. A. Stephens Graham announce that they have entered a partnership for the practice of surgery and gynecology at Stuart Circle Hospital, Richmond.

Dr. Nathan P. Fitts,

Formerly of Strasburg, is now located in Swan Quarter, N. C., where he is assistant health officer to Dare-Hyde-Tyrrell-Washington District Health Department. He recently completed a year's residency at the Decatur and Macon County Hospital, Decatur, Ill., following which he attended a Public Health course at the University of North Carolina.

Dr. Roger L. Creekmur,

Richmond, has been named physician and surgeon of the Richmond Fire Department, succeeding Dr. Greer Baughman who recent resigned. He is a native of Richmond and has been engaged in the general practice of medicine and surgery since graduation from the Medical College of Virginia in 1921.

The Graduate Nurses' Association of Virginia

Held its thirty-eighth annual convention at the Chamberlin Hotel, Old Point Comfort, the latter part of May. Miss Charlotte Pfeiffer, Stuart Circle Hospital, Richmond, was elected president; Miss Eloise Lanford, Richmond, and Miss Myrtle M. Hollow, Charlottesville, vice-presidents; Miss Katherine Gary, Richmond, secretary; and Mrs. Jessie Wetzlar, Richmond, executive secretary-treasurer (re-elected).

Dr. Sidney Trattner,

Richmond, was recently elected vice-president of the Richmond First Club.

Dr. R. G. McAllister,

Class of '37, Medical College of Virginia, after completing an internship at St. Luke's Hospital, Richmond, will locate about the middle of July at Williamston, N. C., where he will be associated with Drs. J. S. Rhodes and J. A. Eason in general practice.

Captain John L. Waring,

Formerly of Danville and father of Dr. J. B. H. Waring of Wilmington, Ohio, former Virginian, attended finals of the Virginia Military Institute in June, where he received much attention as the oldest living graduate present, being of the class of 1870. After a visit with his daughter in Richmond, Captain Waring will attend the Union-Confederate assembly at Gettysburg before returning to Ohio.

For Sale—

Elliott Treatment Machine. Perfect condition. \$100.00. Write "Machine", care the VIRGINIA MEDICAL MONTHLY. (Adv.)

Home for Convalescences.

A home for the care and treatment of chronic aged and convalescences has been opened at Arrington, Nelson County, Virginia, under the care of Dr. and Mrs. Fred M. Horsley. Information upon request. (Adv.)

Obituary Record

Dr. William Andrew Brumfield,

Prominent physician of Farmville, died of a heart attack on May 29. He was a native of Pittsylvania County and sixty-three years of age. He graduated from the University of Virginia, School of Medicine, in 1897. Dr. Brumfield was a widely known health authority and had served as director of the Southside Health District for the past twelve years. Before going to Farmville, he was health officer at the Virginia Polytechnic Institute. Dr. Brumfield had been a member of the Medical Society of Virginia for thirty-five years. His wife and seven children survive him.

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VIRGINIA MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

69th Annual Meeting, Medical Society of Virginia, Danville, October 4-6, 1938

Vol. 65, No. 8.
WHOLE No. 1034.

RICHMOND, VA., AUGUST, 1938

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32, 241-245 35-No. 11, 590

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VIR

Virginia Medical Monthly

Official Publication of the Medical Society of Virginia

Vol. 65, No. 8.
WHOLE No. 1034.

RICHMOND, VA., AUGUST, 1938

\$2.00 A YEAR
25 CENTS A COPY

THE LIMITATIONS OF PHRENIC SURGERY IN PULMONARY COLLAPSE THERAPY.*

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To evaluate the usefulness of any surgical procedure, one must face its limitations, as well as all the possible good results that may follow. And this must be done without regard to personal views, to preconceived enthusiasm, or to prejudice. Any operation recently developed, and so carrying the imprimatur of something new, and which is also fairly easy to do by surgeons of average ability, is liable to instant popularity and wide abuse. If such an operative course is further encouraged by internists only partially informed as to its benefit, certain disappointment will be the result. All new operative procedures, it seems, if not too difficult, become too popular. And of such has been the brief, unbrilliant history of the development of phrenic surgery in our field of operative collapse therapy.

The location of the phrenic nerve is unfortunate. So accessible to surgery, and so obvious in function, the type of operation that may be done upon it is all too safe. If hemorrhage is avoided, and only the phrenic nerve is severed, extracted, or crushed, little immediate damage is done. Paralysis of the diaphragm, as indicated, may be promptly induced, and the resulting basal collapse, at once obtained, is hailed as the desired objective.

But, unfortunately, the symptoms from which one selects this operation are of long and obdurate duration, and miracles do not happen. Some of the reports on phrenic surgery indeed sound truly miraculous. But they may be definitely misleading. In spite of, or it may be on account of, the obviously good surgical results of phrenic section, the real purpose of the operation may have been forgotten. The patient's loss of time, his mounted expense, and the ultimate ill-effects of the operation, if any,

must be thoroughly investigated and weighed against all such immediate successes. Such a comparison is the purpose of my presentation today.

Operations on the phrenic nerve have a definite and limited place in the closing of certain selective cavities in pulmonary tuberculosis. When we have said this much, we have already been quite liberal in the expression of our views. The results that have followed in our cases, and in the cases of other operators in our clinic, have not justified the current widespread use of and enthusiasm for phrenic surgery.

A noted surgeon once said that the reason he didn't write a book on surgery was that he knew much of it would be obsolete before he could publish it. The case of phrenic surgery follows closely. Not many years have passed since John Alexander stated his belief, in 1924, that "the time will come when almost every artificial pneumothorax undertaken in the best clinics will be preceded or followed by phrenicectomy." It is true, in 1937, that an occasional crushing of the phrenic nerve was found helpful in pneumothorax. But no one would be optimistic enough to make such a forecast today. Experience has refuted a thoughtful opinion of even so wise and authoritative a clinician as John Alexander.

Early in our work in thoracic surgery, phrenic section was used as an index to thoracoplasty. We hoped that some benefit would follow; or, if not, that the simple phrenic operation would give an idea of how the patient would react to a major surgical procedure. This indication for phrenicectomy soon proved obsolete. It did no good; and only placed a greater operative burden on the patient.

A few years later, it was also argued that operations on the phrenic nerve would favorably influence coughing. But Fine and Starr have demonstrated experimentally and conclusively that even paralysis

*Read before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, Va., October 12-14, 1937.

of the whole diaphragm (instead of just half, as affected by phrenicectomy) did not facilitate coughing. They were able to show, however, that tight abdominal strapping, by restricting the costal margin, would impair the effectiveness of cough. In other words, interference with the phrenic nerve has no influence on the force of the respiratory blast.

Certain European authorities have observed still another phase of the therapeutic value of phrenicectomy. They attribute some of their good results to its effect upon the sympathetic nerve fibres which are associated with the phrenic nerve, rather than to the mechanical effect of the operation by paralysis of the diaphragm. The interruption of these sympathetic fibres, they hold, brings about a rapid decrease of the pleuro-pulmonary secretions. Three such cases, reported by Bibebescu and Polotas in Roumania, showed marked improvement after phrenicectomy; although, because of adhesions, no appreciable elevation of the diaphragm was produced.

In discussing the importance of any operation for the cure of pulmonary tuberculosis, we have found that *the closure of cavities* is and must always be uppermost in our minds. Pneumothorax should always draw first place in the treatment. And if it is begun at the opportune time, which is early, the indications for phrenic surgery and for thoracoplasty will be accordingly reduced. In later cases, as stated above, we may do an occasional phrenic operation in conjunction with pneumothorax if adhesions to the pericardium and chestwall, or to the diaphragm at the base of the lung, interfere with adequate collapse. This is seldom a permanent resection of the phrenic nerve, but rather a crushing which causes a temporary interruption of its function. In cases of hemorrhage, we have crushed the phrenic nerve with benefit. We continue to use phrenic interruption in cases which react badly to pneumothorax.

But in accounting for actual closure of cavities, we must be guarded in our statement of results from this procedure. In thick-walled cavities located in or near the apex, we have accomplished nothing by phrenicectomy toward their closure, but have subjected the patient to an unnecessary surgical procedure, and have lost valuable time, when a selective thoracoplasty should have been done. Our experience since has shown clearly how impossible it is for phrenic section to influence cavities with average

fibrosis; we now know that even an extensive thoracoplasty does not close all cavities.

The large majority of pulmonary cavities are found in the apex; to this location, therefore, our surgical attack must nearly always be directed. Central lesions of long standing show little effect from operation on the phrenic nerve. Lesions located at the base of the lung are relatively infrequent in the white race; and such cavities present the chief (if not the only) indications for phrenic surgery in tuberculosis. One other type of lesion is also influenced by phrenicectomy, namely, an early thin-walled cavity, which is not fixed by stubborn fibrous tissue. But has not experience shown that the great majority of these cases can and should be collapsed by pneumothorax?

Another factor in the misuse of phrenicectomy is its lack of consideration for healthy lung tissue. All surviving sound lung tissue, which is to bear the brunt of recovery, is most valuable; and it should be spared all possible embarrassment. Since the usual tuberculous lesion is located in the apex, healthy lung tissue is usually established toward the base. The maximum compression following phrenicectomy is at the base of the lung. But phrenic surgery cannot differentiate between this invaluable healthy tissue and the basal lesion it may or may not compress. The compression following phrenic section is undetermined. And how often is this compression exerted against the wrong location?

The reported results from phrenic surgery differ widely. Graham states that phrenicectomies alone have cured only 4 per cent of his patients on whom it was employed. O'Brien reports the closure of cavities in 50.5 per cent of his cases, and states further that cavities were reduced in another 31.2 per cent of cases. The great disparity between these summaries may be explained in Graham's further statement that those surgeons now doing phrenicectomies with enthusiasm have not reported very widely on thoracoplasties; and that the pioneers in thoracic surgery report few phrenicectomies.

Some years ago, in our earlier work in the surgical treatment of pulmonary tuberculosis, we did the standard complete thoracoplasty, removing sections of eleven ribs. This was always a formidable operation; and at that time we made frequent use of the operation on the phrenic nerve, hoping to avoid the necessity of the extensive rib resection. We also then subscribed to the current experimental practice

of doing a phrenicectomy as a preliminary to thoracoplasty.

In the last decade, we have definitely changed the whole course of our surgical procedure in this field. Directing our attention to the closure of cavities, we have departed radically from the so-called "standard thoracoplasty". We have abandoned any set operation in this disease, and have chosen for every case a *selective* operation, directly purposing to close the given cavities of the individual case. For an apical cavity, we do an apical operation only, the extent of the operation depending on the extent of the involvement. With my co-worker, Dr. Cole, we have called this development the *Selective Thoracoplasty*. We have had universally good results; and the general adoption of this procedure by other clinicians has been gratifying to us.

Since adopting this policy of the selective thoracoplasty, we have found few indications for phrenic surgery.

DISCUSSION

DR. E. C. DRASH, University: There are several points in Dr. Johns' paper with which I cannot entirely agree. Dr. Johns feels that too many phrenic nerve operations are being done, principally because it is a new procedure and because of the accessibility of the phrenic nerve.

Actually, operations on the phrenic nerve were begun and developed from 1911 to 1914. Further changes in the type of operation were made about 1921 and even in more recent years. Since the operation was first suggested and done in 1914, its development has been more or less parallel with the development of thoracoplasty.

Evislon of the phrenic nerve, which was the old type of phrenicotomy, has been abandoned. This operation became obsolete because of its dangers and because it was found that either temporary or permanent paralysis of the diaphragm can be very readily controlled by resection of the accessory nerve, and the proper handling of the main trunk.

Paralysis of the diaphragm has many uses in the treatment of pulmonary tuberculosis. It is too much to expect that a large thick-walled apical cavity will be closed by diaphragmatic paralysis. However, occasionally such a cavity will close with paralysis of the diaphragm and, rarely, even on bed rest alone.

It is, of course, impossible to state that paralysis of the diaphragm is to be preferred to pneumothorax or thoracoplasty. However, there are many early and minimal cases in which healing of the lesion can be obtained with bed rest and temporary paralysis of the diaphragm. It seems to me that this is infinitely better than to start the same patient on a course of pneumothorax with its attendant dangers, its expense and the prolonged treatment which is necessary.

Recently there has been much discussion concerning the

advisability of more or less universal pneumothorax which permits a patient to leave the sanatorium in a short time and to continue his treatment at home. Certainly there are a fair number of minimal cases who will achieve a much better ultimate result on sanatorium care with a temporary phrenic paralysis than they will on ambulatory pneumothorax.

I have done phrenic nerve operations on a number of patients each of whom had a fairly extensive tuberculous infection in the apex. This operation was done, not because it was the preferable procedure, but because it could be done without cost to the patient and because the patient was totally unable to obtain a thoracoplasty which he urgently needed.

Dr. Johns states that his experience with paralysis of the diaphragm has been unsatisfactory. I am sorry that he has had unfavorable results with this procedure and I hope that he will not give up its use, because it occupies a very worthy position in the treatment of pulmonary tuberculosis. It is, of course, not adaptable to all cases. Perhaps too much is expected from it. In far-advanced cases which are unable to have thoracoplasties either because of disease in the contralateral lung or because of poor financial condition, paralysis of the diaphragm often results in marked relief of cough and definite clinical benefit, even though it results in very little or no improvement in the lesion itself.

If a careful search for the accessory nerve is made, this operation is not to be undertaken too lightly, even though the main trunk is in a relatively accessible position.

DR. W. E. BROWN, Charlottesville: It seems to me that we are all agreed that pneumothorax is the desirable method to compress the lung whenever feasible.

I must confess that I have always felt that phrenicectomy to give permanent paralysis to one-half of the diaphragm was a procedure to be prayerfully considered before you went into it, because, after it is done, it is irrevocable. A good many years ago when we first started doing phrenics at Blue Ridge Sanatorium, Dr. S. E. Hughes, of Danville, recommended to me temporary paralysis of the phrenic nerve by crushing, and this appeared to be a more reasonable procedure. At first I felt rather skeptical about any marked benefit from phrenic paralysis in lesions in the upper half of the lung. It did not seem reasonable that paralysis of the diaphragm could benefit a lesion in the upper half of the lung. I want to say now that I am convinced that I was mistaken in that idea. While I believe thick-walled cavities cannot be compressed or closed by phrenic paralysis, we have gotten some rather remarkable results with thin-walled cavities above the second rib.

We have had phrenic nerve operations done on one hundred and fifty-two patients. The large majority of these have been temporary paralyses. Of these, one hundred and thirty-one cases have been discharged from the Sanatorium, and of the discharged cases one hundred and six had the majority of the disease in the upper lobe. Eighty of these cases had positive sputum, and thirty-eight, or 47.5 per cent, became negative. Eighty had definite

cavity formation, and forty-five, or 56 per cent, had the cavity closed. Twenty-five had disease in the lower lobe; twenty-three of these showed positive sputum, and thirteen, or 57 per cent, were rendered negative. Eighteen showed cavity formation, and ten of these, or 55.5 per cent, became closed. The condition on discharge was as follows:

| | |
|-----------------------------|--------------|
| Arrested or quiescent ----- | 11, or 8.4% |
| Improved ----- | 87, or 66.4% |
| Unimproved ----- | 16, or 12.2% |
| Died ----- | 17, or 13.0% |

Twenty-seven had phrenics to assist thoracoplasty, and eight of these died following the major operation. Twenty-one had phrenics to assist partial pneumothorax.

The great majority of our phrenic operations are done on patients who are unable to take pneumothorax and who were not doing well under routine rest treatment. Phrenic paralysis is not a cure-all, and each case should be carefully considered before treatment is instituted.

The percentage of improvements in properly selected cases is certainly much higher than can ordinarily be gotten with bed rest alone.

DR. JOHNS, closing the discussion: I appreciate the interest in the subject of this paper, as shown here by the discussion of my friends. In closing, I would clearly restate my purpose as to the uses of phrenic surgery. I am not trying to "popularize thoracoplasty". But I have urged that phrenic operations be used only when indicated.

Owing to our city's central seaboard location, we have seen the results of phrenic surgery by many operators. It has been our misfortune to see these cases after they have been dismissed as cures following various types of phrenic surgery. The follow-up of these cases has frequently made plain to us the loss of time and the poor results of the too liberal use of phrenic surgery.

Early diagnosis and early pneumothorax will decrease the necessity for any type of thoracic surgery. But when surgery is indicated, we must select the procedure which will give the best permanent results.

SKIN MANIFESTATIONS IN TULAREMIA.*

J. M. HITCH, M.D.,
Raleigh, North Carolina,
and
D. C. SMITH, M.D.,
Charlottesville, Virginia

In 1910 Pearse¹ published the first description of the clinical manifestations of tularemia. Since that time the number of cases reported annually has increased many times. Inasmuch as the literature contains extensive accounts of practically all phases of the disease, this presentation will not include general considerations.

Because of the increasing number of reported animal hosts and insect vectors, it is now understood that the disease is surely not restricted geographically nor its victims to certain occupational or social classes. Simpson² was able to find in 1933 that tularemia had occurred in twenty-two animals and insects. Because of the widespread distribution of the infection and the fact that there are relatively afebrile cases which Kavanaugh³ has termed "ambulatory tularemia", one may not suspect the proper diagnosis if the patient presents only a primary ulcer or a generalized eruption.

The various cutaneous reactions which had been reported up to 1927 were included in a paper by Netherton⁴. The purpose now is to supplement his original compilation with those cases which subsequently have appeared in the literature and those reported here.

The classification of the dermatological manifestations resolves itself into three groups: (1) the primary ulcer, (2) the nodular lymphangitis extending upward from the site of the primary lesion, and (3) the generalized eruptions.

THE PRIMARY LESION

Kavanaugh³ has reported 123 cases of tularemia, 102 of which showed primary lesions, while six were classified as the primary cutaneous type without primary lesion but with regional glandular enlargement. In the remaining fifteen cases, six were of the primary ophthalmic type, while nine were cryptogenic—that is, they presented no visible lesion, regional glandular enlargement or local manifestation. This shows that by far the majority of patients exhibit a primary ulceration. These have been reported to occur on practically every portion of the body.

*From the Department of Dermatology and Syphilology, University of Virginia Medical School. Dr. Hitch has since moved to Raleigh.

Read in part before sixty-eighth annual session of the Medical Society of Virginia in Roanoke, on October 13, 1937.

The ulceration is usually singular but may be multiple and may be very small. The incubation period is from one to seven days. The disease is usually ushered in by a prodrome of sweating and fever and often with enlarged regional lymph nodes even before the appearance of the primary sore. The lesion generally begins as a small inflammatory papule which gradually enlarges, ruptures and discharges a necrotic core, leaving a painful, deep ulceration (Fig. 1).



Two well-developed primary ulcers.

In the typical case the diagnosis is usually clear. However, those which are afebrile or which have the primary lesion in an unusual location may present real difficulties. The ulceration might conceivably be confused with a bone felon, non-specific infection

from injury, a chancre, anthrax, actinomycosis, chancroid, lymphogranuloma inguinale or tuberculosis.

The early positive diagnosis at this stage is probably best made with the intradermal test developed by Foshay⁵ in 1932. This usually becomes positive within four days after the onset of the disease; it is easy to perform and supplies a rapid method of diagnosis.

The histologic picture of the primary ulcer was



Unusual granulomatous lesions along lymphatic chain in a patient with both tularemia and early syphilis. Photograph taken twenty-one weeks after onset of disease. (Courtesy Dr. S. D. Blackford and Dr. D. C. Smith.)

first studied by Netherton⁴ and later by Goodpasture and House⁶, Bunker and Smith⁷, Belote⁸, and Foulger, Glazer, and Foshay⁹.

THE SUBCUTANEOUS NODULES

Subcutaneous nodules along the lymphatic chain from the site of the primary inoculation occur in 20 to 30 per cent of all cases. These nodules usually appear early in the course of the disease, may vary from one to as many as thirty and of course are usually on the arm. They are at first quite firm and deep but with age soften and progress superficially while the overlying skin becomes erythematous, glazed and later purplish. They may eventually fluctuate and rupture spontaneously or subside intact. These nodules are most usually confused with sporotrichosis, cutaneous tuberculosis or late syphilis.

An unusual variant of the nodular lymphangitis has been reported by Blackford and Smith¹⁰. This patient had concomitant tularemia and secondary syphilis and developed along the lymphatic chain a series of fungating granulomatous ulcerations from which *B. tularensis* was demonstrated as late as twenty-one months after the onset of the disease (Fig. 2).

If the disease is over two weeks' duration the agglutination test is fairly reliable but prior to that time the intradermal test is to be preferred. As in

the primary ulcer *B. tularensis* can be demonstrated microscopically or by animal inoculation, but these procedures are highly specialized and impractical for general use.

The histologic changes in these subcutaneous nodules have been well described by Permar and Weil¹¹, Francis and Callender¹², and Shelmire¹³.

THE GENERALIZED ERUPTION

The occurrence of generalized cutaneous manifestations have appeared intermittently in the literature since the disease was first described. Practically all the elementary lesions such as macules, papules, vesicles and pustules have been recorded (Fig. 3). Apparently Netherton's⁴ collection of these cases in 1927 is the last that has been made except in a comprehensive study of the disease by Francis¹⁴ in 1928 when he made brief notations of twenty-eight patients. A survey of literature reveals forty-three such cases and to these are added five (see table).

Color, sex and age do not seem to be determining factors for the presence of the generalized eruption. It is to be noted also that the ages range from nine to sixty-nine years while the distribution as to sex was about equal.



Patient with maculo-papular generalized eruption exhibiting many of the characteristics of erythema multiforme. Photograph taken on fifteenth day of disease.

| CASE No. | COLOR | SEX | AGE | TYPE* | INCUBATION† | ONSET‡ | DURATION OF ERUPTION† | TYPE OF ERUPTION | DISTRIBUTION OF ERUPTION |
|---------------------------|-------|-----|-----|-------|-------------|----------|-----------------------|--|---|
| 1 ⁽¹⁵⁾ 16 | W | M | 36 | C | ? | 8 | 15 | Papular, erythematous | Head, arms, dorsum of hands |
| 2 ⁽¹⁵⁾ 16 | W | M | 33 | C | ? | 10 | ? | Papular, erythematous Pustular | Neck, forehead, hands, knee Arms, forearms |
| 3 ⁽¹⁵⁾ | ? | ? | ? | ? | ? | ? | ? | Annular raised areas, violaceous | Neck, trunk |
| 4 ⁽¹⁵⁾ | ? | ? | ? | ? | ? | 7 | 10 | Painful blotches, erythematous | Neck, cheeks, forehead |
| 5 ⁽¹⁵⁾ | ? | ? | ? | ? | ? | ? | ? | "Extreme herpes" | |
| 6 ⁽¹⁵⁾ | ? | ? | ? | O | ? | ? | ? | Pustular | Cheek |
| 7 ⁽¹⁵⁾ | ? | ? | ? | O | ? | ? | ? | Pustular | Periorbital (same side) |
| 8 ⁽¹⁵⁾ | ? | ? | ? | O | ? | ? | ? | Pustular | Periorbital (same side) |
| 9 ⁽¹⁷⁾ | W | M | 38 | C | ? | ? | ? | Acneform | Back |
| 10 ⁽¹⁷⁾ | W | F | 34 | C | ? | ? | ? | Acneform | Back |
| 11 ⁽¹⁸⁾ | W | M | 35 | U | ? | 14 | 25+ | Pustular Coalescent blotches, erythematous | Forearms Dorsum of hands |
| 12 ⁽¹⁹⁾ | W | M | 42 | U | ? | ? | ? | Papular, erythematous | Dorsum of hands |
| 13 ⁽²⁰⁾ | W | M | 45 | O | 2 | 21 | 55+ | Paronychia soreness "Patches of skin eruption" | Fingers Hand, forearm |
| 14 ⁽²¹⁾ (3) | ? | ? | ? | ? | ? | ? | ? | Acneform | Shoulders, back |
| 15 ⁽⁸⁾ | ? | ? | ? | ? | ? | ? | ? | Acneform | Shoulders, back |
| 16 ⁽⁸⁾ | W | M | 26 | O | 2 | —7 | ? | Papular, maculopapular | Face, neck (same side) |
| 17 ⁽²²⁾ | W | F | ? | U | —7 | ? | 3+ | Papular, violaceous | Neck, trunk |
| 18 ⁽⁴⁾ | W | F | 34 | U | 1 | 24 | 10+ | Erythematous papules, plaques "Erythema multiforme" | Neck, arms, hands, thighs |
| 19 ⁽²³⁾ | W | F | 58 | U | 5 | 6 | 14 died | Papular Papulopustular | Chest, back Abdomen, thighs |
| 20 ⁽²⁴⁾ | W | M | 32 | U | 3 | 16 | 34 died | Maculopapular, erythematous | Chest, abdomen |
| 21 ⁽⁹⁾ | W | F | 37 | U | 4 | ? | 22 died | Papulopustular | Chest, thigh (opposite side) |
| 22 ⁽²⁵⁾ | W | M | ? | U | 4 | 21 | 36 died | Papular | Back |
| 23 ⁽²⁶⁾ | B | F | 33 | U | 6 | 22 26 | 3 7 | Maculopapular Maculopapular | Arm (same side) Leg (same side) |
| 24 ⁽²⁷⁾ | W | M | 48 | U | 4 | 20 | 2 | Urticarial | |
| 25 ⁽²⁸⁾ | W | M | 69 | U | 2 | 12 | ? | Macular, maculopapular | Face, chest |
| 26 ⁽²⁸⁾ | W | M | 28 | U | 4 | 10 | 60+ | Acneform | Neck, forearms, dorsum of hands |

Detailed summary of patients showing secondary eruptions.

*U=Ulcero-glandular; O=Oculo-glandular; C=Cryptogenic.

†=In days.

‡=Day of disease on which eruption appeared.

| CASE No. | COLOR | SEX | AGE | TYPE* | INCUBATION† | ONSET‡ | DURATION OF ERUPTION† | TYPE OF ERUPTION | DISTRIBUTION OF ERUPTION |
|----------|-------|-----|-----|-------|-------------|----------|-----------------------|--|--|
| 27(29) | W | M | 17 | 0 | 5 | 42 ? | ? 113+ | Papular Circumscribed maculopapular | Cheek Upper lip |
| 28(29) | W | M | 16 | C | 6 | 7 | 113+ | "Red pimples" "Another skin eruption" | Hands, feet Face |
| 29(30) | W | M | 53 | U | 1 | 21+ | 7 | Yellow-red macular desquamating "Blisters under nails" | Universal |
| 30(31) | W | F | ? | U | 7 | 21+ | —70 | Deep-seated erythematous, painful nodules | Anterior legs |
| 31(32) | W | M | 37 | U | 2 | 23 | 37+ | Pustular | Shoulders, buttocks |
| 32(33) | W | M | 45 | U | 3 | ? | ? | Pustular | Back, chest |
| 33(34) | W | F | 43 | U | 3 | 14 | ? | Papular | Back, wrist (same side) |
| 34(35) | W | M | ? | 0 | ? | —31 | 4 | Papulovesicular exanthem | Head, forearms, hands (treated with serum) |
| 35(35) | W | F | ? | U | ? | 13 | ? | Macular, papular, vesicular exanthem | Scalp, neck, chest, back, arms (treated with serum) |
| 36(35) | ? | ? | ? | U | ? | ? | ? | Papulovesicular exanthem | Face, neck, chest (treated with serum) |
| 37(36) | W | F | 38 | U | 2 | ? | —60 | Acneiform Violaceous splotches | Back Back, knees, legs |
| 38(37) | W | M | 39 | U | ? | 5 | 10+ | Macular, erythematous to vesicu- lation, to pustulation | Universal |
| 39(37) | W | M | ? | U | 4 | ? | 5 | Macular, violaceous | Groin (same side) Few on trunk |
| 40(38) | W | M | 25 | U | 2 | 14 | 21 | Papular, erythematous | Face, neck, shoulders, legs |
| 41(39) | W | F | 32 | 0 | 2 | 15 19 | 14 9 | Erythematous plaques Urticarial, purpuric | Knees Arms, legs |
| 42(40) | W | F | 22 | ? | ? | 90 | 6 | Papular | Arms, trunk |
| 43(41) | W | M | 36 | U | 2 | —40 | 24 | Papular, violaceous | Neck, back, hands |
| 44(42) | W | M | 18 | 0 | ? | —14 | —50 | Pustular | Cheek (same side) |
| 45 | W | M | 23 | ? | 1 | ? | 16 died | Papular | Chest, shoulders |
| 46 | B | M | 9 | U | 2 | ? 7 | 9 died | Macular Purpuric, bullous | Universal Arm, chest, abdomen |
| 47 | W | F | 55 | U | 3 | —12 | ? | Papular, erythematous | Dorsum of hands |
| 48 | W | F | 40 | U | 1 | 12 | 29 | Papular, maculopapular, erythe- matous. "Erythema multiforme" | Neck, chest, back, arms |

Detailed summary of patients showing secondary eruptions.

*U=Ulceroglandular; O=Oculoglandular; C=Cryptogenic.

†=In days.

‡=Day of disease on which eruption appeared.

The particular type of tularemia was recorded in forty-one cases and it is found that twenty-seven were the primary cutaneous type, nine ophthalmic and five cryptogenic. From the data given it appears

that most of the remaining seven cases belong to this last type, illustrating that the only external manifestation of the disease may be a generalized eruption.

In twenty-seven cases the incubation period varied from fourteen hours to seven days with a mean of three days. The time between the onset of the disease and the appearance of the eruption varied between five days and three months, the average being in the second and third week. The duration of the eruption varied between two and 113 days with an average of 21.9 days.

The temperature curves for those patients showing a generalized eruption were about typical for tularemia in general.

Most of the patients showed an eruption of multi-forme character and a division according to the various types of lesions disclosed that twenty-three exhibited papules, fourteen macules, seventeen pustules, three papulovesicles, five vesicles, one wheals, and one nodules. An analysis of cases for location for the eruption showed that in the majority of patients it occurred on the upper portion of the trunk and upper extremities. In some cases the eruption was unilateral or preponderantly on one side. Almost invariably this was the side of the primary lesion. It appears therefore that although the noxious material is undoubtedly blood borne, lymphatic drainage plays some part in the localization of the eruption. Because of the varied character of these tularemic eruptions a discussion of differential diagnoses is impractical. Suffice it to say, it most often resembles the "toxic eruptions" or erythema multiforme.

Netherton⁴ first described the histologic changes in a case showing a maculo-papular type of eruption. His original study has been augmented recently by Lillie and Francis⁴³. Biopsies of maculo-papular lesions from two patients studied here (cases No. 37, No. 48) showed histologic pictures very similar to those seen in erythema multiforme.

COMMENT

It has been proved that the bacteremia in tularemia ceases after the fourteenth day. Injection of blood into guinea pigs has never been positive after that period. However, guinea pig inoculations from the internal organs, the primary lesions, and the nodular lymphangitis have often been positive for much longer periods. Netherton⁴ performed guinea pig inoculations with tissue from the generalized eruption on the twenty-ninth day of the disease with negative results. From one of the patients seen here (case No. 48) a large specimen of one of the skin lesions was obtained by biopsy and after re-

moval of the gross blood was injected subcutaneously into two guinea pigs. These animals showed no evidence of the disease at any time. At the same time 5 cc. of blood were obtained from this patient, defibrinated and injected into one guinea pig subcutaneously and one intraperitoneally. These animals also remained healthy throughout the period of observation. This, of course, does not conclusively prove that the secondary lesions are not infective but it does support that theory that these manifestations are of a toxic nature. Additional support of their theory is perhaps also offered by the fact that the average time of the onset of the eruption is the sixteenth day, with many much later while the blood stream infection has been shown to be absent by the fourteenth day. The multiplicity of the types of lesions also argues for its toxic nature. This theory has already been advanced by Miller and Taussig⁴⁴, Netherton⁴, Markley⁴⁵, Baer⁴⁶, and others.

Therefore this multi-forme cutaneous manifestation of tularemia should be of particular interest, for it represents one more specific etiologic agent which can be responsible for a "toxic eruption". The correct diagnosis is particularly difficult in a case of "ambulatory tularemia" of the cryptogenic type. Even in those with a febrile onset it has been shown that the temperature may have subsided before the onset of the eruption, thus illustrating the point that an occasional case of erythema multiforme or toxic eruption of obscure etiology may indicate a test for tularemia.

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NUTRITIONAL DEFICIENCIES AND THEIR RELATION TO THE CLINICAL COURSE OF HEART DISEASE.*

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For the past seven years we have been interested in the relationship of inadequate nutrition to the functional integrity of the heart. It must be apparent that the physiologic efficiency of the myocardium is immediately concerned with a constant supply in adequate quantities of those essential elements necessary for an optimal state of heart muscle fitness. In judging the importance of food deficiencies as related to the heart, several questions are immediately presented for consideration:

- A. Is the normal heart so affected in those diseases which are caused by specific deficiencies (avitaminosis) that its functional integrity is impaired to the degree that heart failure ensues?
 - B. Is the functional efficiency of the diseased heart liable to premature failure or is the heart which is failing under strain made functionally less efficient by subclinical types of the deficiency states?
 - C. And, finally, is recovery from heart failure delayed or made less complete by diets sub-standard in quality?
- A. Avitaminosis:

An absolute lack or a great increase in the needs for protective foods (vitamins) without a corresponding increase in the ingested quantity, finally results in a depletion of tissue stores and a deficiency disease results. The diseases known to be produced by avitaminosis are scorbutus (scurvy), rhachitis, probably pellagra and beriberi.

Scorbutus (scurvy), vitamin C deficiency, does not affect the heart to a degree clinically significant. The pathologic lesions involve primarily the arterioles and capillaries with a marked tendency toward hemorrhages which may involve the epicardium and pericardium. Degeneration of the myocardium has been found in fatal cases of scurvy.

Recent experimental observations appear to indicate that lesions quite similar to those found in rheumatic fever can be produced in animals suffer-

ing from subacute scurvy when they are subjected to parenteral injections of streptococci. It is possible that vitamin C is an important element in the defensive mechanisms of the animal for the nature of the reaction to infection in animals can be definitely modified by vitamin C.

Rhachitis (rickets) is concerned primarily with a deficiency of vitamin D. Children dying of this disease show at necropsy cardiac dilatation predominantly of the left ventricle. From a clinical standpoint the cardiac complications are not of great importance, for in most civilized communities the condition is corrected by diet and sunshine before cardiac complications have become clinically significant. Indirectly vitamin D deficiencies are important, for children with rhachitis are very susceptible to upper respiratory infections which in turn tend to activate latent rheumatic fever.

Pellagra is in part concerned probably with a deficiency of vitamin B₂ or G. During the course of this study we have been particularly interested in the state of the cardio-vascular apparatus in pellagra. Recently in a discussion of endemic pellagra the opinion was expressed that pellagra, *per se*, did not significantly affect the heart¹. Since then we have reported the results from a study of twenty-five selected endemic pellagrins who were studied with the aid of teleroentgenograms, frequent electrocardiograms and the usual standard clinical methods². Twenty-three additional patients were treated for pellagra during the same period, making a total of forty-eight endemic pellagrins observed over varying periods. It is highly significant that in not a single instance did heart failure of the congestive type on angina pectoris develop. This fact clearly indicates that pellagra does not affect the heart to a degree sufficient to impair its functional integrity. We now have complete data on twenty-three additional cases of pellagra[†], and a study of this material emphasizes the original conclusions that the hearts of pellagrins are substandard or normal in size, that varying degrees of sinus tachycardia invariably occur

*Read before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, Va., October 12-14, 1937.

†The details will appear in a separate publication.

during the disease and late into convalescence. In only two instances were there significant changes in the electrocardiograms not adequately explained by associated diseases. Feil³, and Weiss and Wilkins⁴ have been impressed with the similarity of the effects of pellagra and beriberi on the heart. Unfortunately, these authors do not make a clear distinction between those patients who have the characteristic symptoms and the physical signs of typical pellagra and "nutritional deficiency states (beriberi)". We believe that pellagra is a definite clinical entity and can be clearly differentiated from beriberi. This difference in the material studied probably explains why we conclude that beriberi and pellagra have no comparable effect on the heart. The difference is so absolute that one ventures the opinion that B₁ is not concerned with the pathogenesis of pellagra.

Beriberi, a disease which is primarily the result of a deficiency of water soluble vitamin B₁, is characterized by peripheral neuritis, edema, and in many cases cardiac insufficiency.

From the viewpoint of heart disease beriberi occupies a unique position in clinical medicine, for it emphasizes the importance of dietary deficiencies in the production of serious degrees of myocardial failure. Patients dying of beriberi show definite changes in the heart. There exist varying degrees of dilatation of the chambers, particularly the right ventricle and auricle. Histologically there is a hydropic degeneration of the muscle fibers with fatty infiltration of the myocardium⁵. Because of the frequent occurrence in beriberi of neuritis and nutritional edema as well as congestive heart failure the patients are divisible into three groups: (1) neuritic type; (2) edematous type; (3) cardiac type. While these types invariably overlap, the cardiac type is seen in those patients in whom neuritis is present only in a mild form.

The onset of beriberi is insidious and progressive. Fatigability and palpitation on exertion occur early. Breathlessness is felt but is not so pronounced as the above symptoms. In the well-developed case of the cardiac type of beriberi, the symptoms are those of congestive heart failure. The heart shows varying degrees of enlargement, and the character of the apex beat is feeble and diffuse, indicating a preponderance of cardiac dilatation. Systolic murmurs are frequent but diastolic murmurs are not present. The

pulmonic second sound is accentuated, but pulmonary congestion is infrequently present. There may be marked venous engorgement and an enlarged tender liver in the more advanced degrees of heart failure.

The heart rate is as a rule accelerated above 100 beats per minute and the rate is easily accelerated by the slightest exertion. The blood pressure is not characteristically altered. Edema of the lower extremities occurs early and in advanced untreated cases general edema with ascites and hydrothorax occurs. The electrocardiograms are characterized by a notable absence of disturbances of cardiac rhythm, but frequently show small complexes, depressed "T" waves and aberration of the ventricular complexes.

The treatment of the beriberi patient with heart failure consists of bed rest and a diet rich in vitamin B₁ and adequate amounts of complete proteins. Recently Hashimota⁶ has reported very striking clinical results from the intravenous use of vitamin B₁ in acute pernicious cardiac forms of beriberi. Adequate dietetic treatment results in rapid clinical improvement; and the enlarged heart promptly resumes a normal size, and functional efficiency is restored.

From the standpoint of clinical cardiology B₁ avitaminosis is the only specific deficiency disease which, *per se*, is productive of changes in the heart of a serious character. The prompt response to the administration of an adequate diet leaves no doubt that the beriberi heart is a definite clinical entity and for this reason it occupies a unique position in a discussion which deals with the relationship of deficiency states to the heart.

B. The relationship of subclinical deficiency states to the premature development of congestive heart failure in patients known to have varying degrees of organic heart disease:

The evaluation of the importance of food deficiency, or any single factor, as it may influence the bizarre and unexpected behavior of chronic disease is fraught with many pitfalls. Nevertheless, the problem is simplified when one appreciates the fact that in this country a deficiency in one element essential to optimal nutrition rarely exists to an absolute degree or as an isolated deficiency, but rather as a group deficiency with a preponderance of the clinical characteristics of one essential factor. The importance of the full appreciation of this truth is obvious, for one is rarely able to elicit a dietetic his-

tory indicating a complete lack of any single essential food; but rather an inadequate quantity of many with a significant deficiency of one factor predominating.

Other factors of cardinal importance are the change in the metabolic needs of the enlarged myocardium and the necessity for optimal concentration of the essential elements in the coronary blood when there develop quantitative changes in the minute volume of coronary blood flow. Organic heart disease is invariably accompanied by enlargement of the myocardium, which not only increases its metabolic needs, but its cellular metabolism is slowed down due to the increase in the distance metabolites must move in and out of the enlarged muscle fibre.

Varying degrees of coronary disease with consequent reduction in the minute volume flow of blood to the myocardium are frequent accompaniments of the cardiac pathology seen in this section. The physiologic integrity of the myocardium is dependent upon an adequate blood supply to meet its metabolic needs, and these needs are increased by the presence of heart disease; and, when there is a reduction in the minute volume of coronary blood flow, the concentration of the essential elements for optimal nutrition must be increased lest cell metabolism suffer and heart failure ensue.

There have been available for many years data on the bio-chemistry of muscle physiology which is immediately concerned with the function of the myocardium, and, conversely, with the development of heart failure.

The physiologic integrity of the heart muscle is dependent upon glucose, insulin and oxygen, and there exists an obligatory interdependency between these elements.

Briefly stated, these data are: an adequate supply of oxygen must be available at all times since the conversion of glucose to glycogen in the heart muscle is dependent not only on insulin but also upon a free oxygen supply. The energy for muscle contraction comes from the breaking down of phosphagen but the energy for the resynthesizing of phosphagen is derived from the breaking down of glycogen to lactic acid. The lactic acid is reconverted into glycogen. Thus, continued heart muscle contraction may be interrupted by lack of phosphagen, or depletion of muscle glycogen, and these deficiencies in turn result from failure in adequate supplies of oxygen and insulin.

The more recent studies on muscle physiology have supplied additional data indicating the importance of an adequate supply of mineral salts; and it may be that experimental evidence will soon confirm the convincing clinical data demonstrating the fundamental importance of specific organic substances, particularly complete proteins and some of the well-known vitamins. It has been shown both clinically and experimentally that, with a reduction in the coronary blood flow, it is obligatory that the concentration of glucose in the blood be raised if a normal muscle glycogen is to be maintained.

Clinical observation indicates that a reduction in the blood sugar to levels approaching the established normal, 100 mgms. per 100 cc., in elderly diabetics is occasionally productive of angina pectoris. This is explained on the basis of the associated coronary sclerosis which makes it obligatory that the blood sugar remain above the established normal lest a glycogen deficiency of the myocardium result and serious heart failure syndromes develop.

A diminution of the oxygen carrying capacity of the blood can be well tolerated by the normal adult through the development of compensatory processes which are so evenly distributed over the body that the individual may carry on with a remarkable degree of physical fitness⁷. However, patients with heart disease, especially those with coronary sclerosis, cannot meet the demands for an increased minute volume of coronary blood flow necessitated by the anemia.

In 1932⁸ we reported a group of patients having angina pectoris accompanying pernicious anemia who became entirely free from all symptoms following adequate liver therapy. One cannot emphasize too strongly the importance of the effects of even slight degrees of anemia on the clinical course of organic heart disease. The work of the heart is constantly increased, dilatation and hypertrophy are accelerated and, due to the reduction of the cross sectional area of the coronary arteries which normally occurs with advancing years, threatening oxygen deficits in the myocardium are ever present.

During the course of this study we have observed patients with heart failure illustrative of the effects of a deficiency state on the clinical course of organic heart disease. The prompt response to rest and adequate diets, and the marked reduction in heart size leave little doubt that B₁ deficiency was an impor-

tant factor in precipitating premature heart failure of the congestive type.

Case 1.—J.P. Diet deficient in complete proteins, protective foods, and in total calories.

A negro man, seventy years old (age uncertain), entered the hospital on October 4, 1935. The history was vague but it indicated that the patient had become increasingly breathless over a period of several weeks and that for the past three weeks edema had increased rapidly, and was at the time of admission very extensive.

Examination showed an elderly man who was manifestly malnourished and seriously ill. The patient was markedly breathless, there was extreme distention of the neck veins, and the liver was tender and 7 cm. below the costal margin. The heart was greatly enlarged, the left border extending out to the anterior axillary line in the sixth interspace and approximately 13 cm. from the mid-sternal line. The first sound was lacking in muscle quality and there was a suggestive mid-diastolic gallop; there were no murmurs. The rhythm was interrupted by an occasional ventricular extrasystole. The aortic and pulmonic second sounds were equal and moderately increased in intensity and amphoric in quality. The blood pressure was 140/100. The peripheral vessels showed a moderate amount of arteriosclerosis, not unusual for the patient's age. The lungs showed dullness over both bases posteriorly and the physical findings of congestion indicated by heart failure rales. The breath sounds were distant over the lung margins, suggesting a moderate amount of pleural effusion. There was widespread body edema extending up to the clavicle, and the phenomenon of a moderate amount of ascitic fluid.

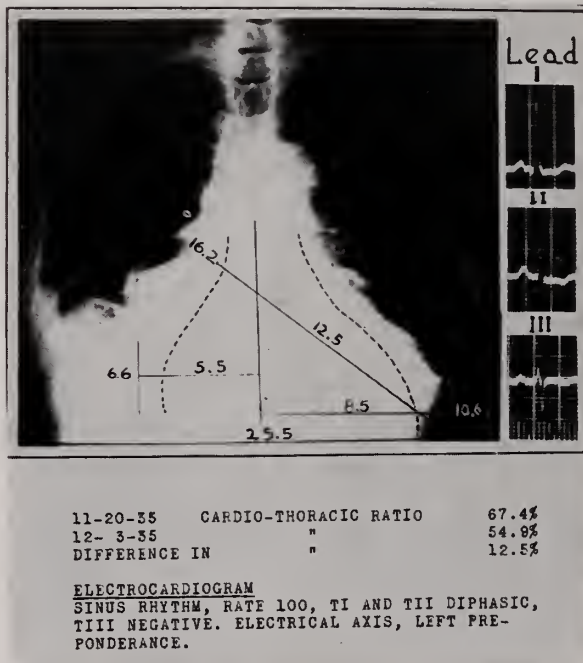
Laboratory Data: Blood chemical studies revealed a non-protein nitrogen of 41 mg.; total protein 5.3 per cent; albumin 3.7 per cent; and globulin 1.6 per cent. Urinalysis: heavy trace of albumin, specific gravity 1.020, no casts, blood or pus. Blood count: hemoglobin 71 per cent; 3,800,000 red cells; 7,900 white cells; 65 per cent polys.

Admission Diagnosis:

1. Cardiac hypertrophy and dilatation
2. Arteriosclerosis
3. Myocardial fibrosis secondary to coronary insufficiency
4. Beriberi heart (subclinical avitaminosis B₁).

Clinical Course: Because of the tremendous

amount of edema, it was thought advisable to place the patient on mercurial diuretics. He was given salyrgan on three successive days, 1 cc., 1 1/2 cc. and 2 cc. Within a period of four days he lost forty-five pounds in weight. Following salyrgan therapy the patient was placed on digitalis and a high caloric diet, rich in proteins and water soluble vitamins. His clinical improvement was dramatic and the patient left the hospital symptom free. (Plate 1, chart 1).



Dotted line indicates reduced heart size superimposed on the original teleroentgenogram.

Since leaving the hospital, the patient has been seen at regulated intervals and he has remained free from symptoms although the heart remains moderately enlarged in spite of a normal blood pressure.

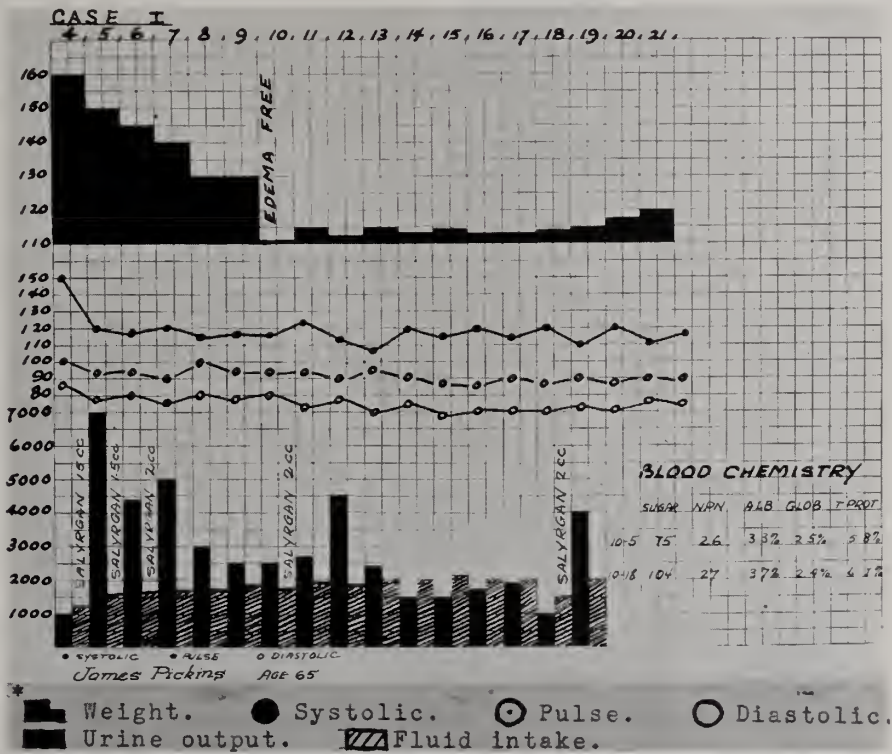
It is perfectly evident that the patient had structural disease in the cardio-vascular system, yet the marked change in cardiac size and rapid and sustained clinical improvement strongly suggest that subclinical beriberi precipitated congestive heart failure. A survey of the patient's dietetic history prior to entering the hospital clearly indicates that he had been living for a prolonged time on a diet which was insufficient in calories, practically free from water soluble vitamins and very low in complete proteins.

Case 2.—G.A.J. White male, aged sixty-five, was admitted on November 18, 1932, and discharged on December 15, 1932.

Chief Complaint: Breathlessness and swelling of the feet and legs.

He stated that for the past few years effort had induced breathlessness, but that the breathlessness had gradually increased in intensity up to six weeks ago, at which time it became so severe that it was necessary for him to remain in bed propped up on a back rest. In addition to these symptoms, he had been having for the past three or four weeks difficulty in voiding, and recently he had been getting up from eight to ten times every night in an effort to empty his bladder. Otherwise, his history was not significant.

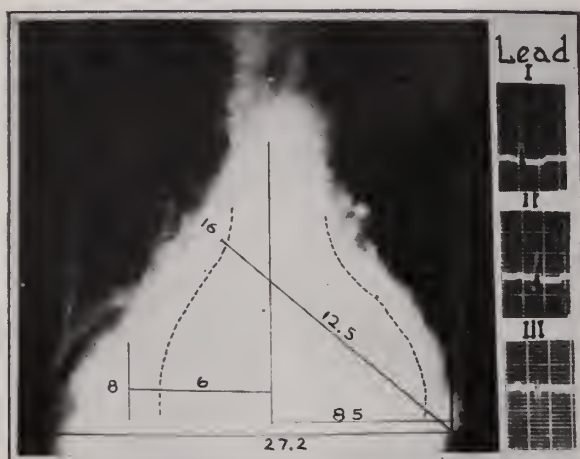
monic second sounds were slightly increased in intensity and were amphoric in quality. The pulse rate was seventy-six to the minute and regular. The peripheral arteries showed a moderate degree of thickening and the blood pressure was 135/75. The abdomen was distended, apparently containing a considerable amount of ascitic fluid and the liver was enlarged 7 cm. below the costal margin and was slightly tender. There was marked edema of the lower extremities extending up above the crest of the ilium. The bladder was easily palpated above the pubic bone and 550 cc. of urine were obtained with the catheter.



Physical Examination: The patient was orthopneic and coughed frequently. The neck veins were markedly distended. The lungs were hyperresonant to percussion both anteriorly and posteriorly except over the bases where the percussion was slightly dull, and there were moist rales over the chest both anteriorly and posteriorly extending as high as the third rib. The cardiac apex was in the sixth inter-space and extended out to the anterior axillary line; the left border was approximately 13 cm. from the mid-sternal line. Auscultation: There were no murmurs; the first cardiac sound was distant, but there was no gallop rhythm; both aortic and pul-

- Diagnosis:
1. Cardiac hypertrophy and dilatation
 2. Arteriosclerosis
 3. Prostatic hypertrophy
 4. Congestive heart failure.

Course in the Hospital: The patient was placed in bed, limited in diet and fluid intake and given adequate doses of digitalis. It is significant that his weight began to decrease and the edema to disappear almost immediately after the beginning of bed rest, and before the effects of digitalis could have influenced the clinical course of the patient. After reduction of edema, the patient was put on a general



| | | |
|---------------|-----------------------|-------|
| 11-21-32 | CARDIO-THORACIC RATIO | 66.1% |
| 11-31-32 | " | 53.5% |
| DIFFERENCE IN | " | 12.6% |

ELECTROCARDIOGRAM
SINUS RHYTHM, RATE 75; TI, TII, AND TIII ISO-ELECTRIC

Dotted line indicates reduced heart size superimposed on the original teleröntgenogram.

diet and left the hospital apparently entirely relieved of all cardio-vascular symptoms. The heart had reduced to approximately a normal size. (Plate 2, chart 2).

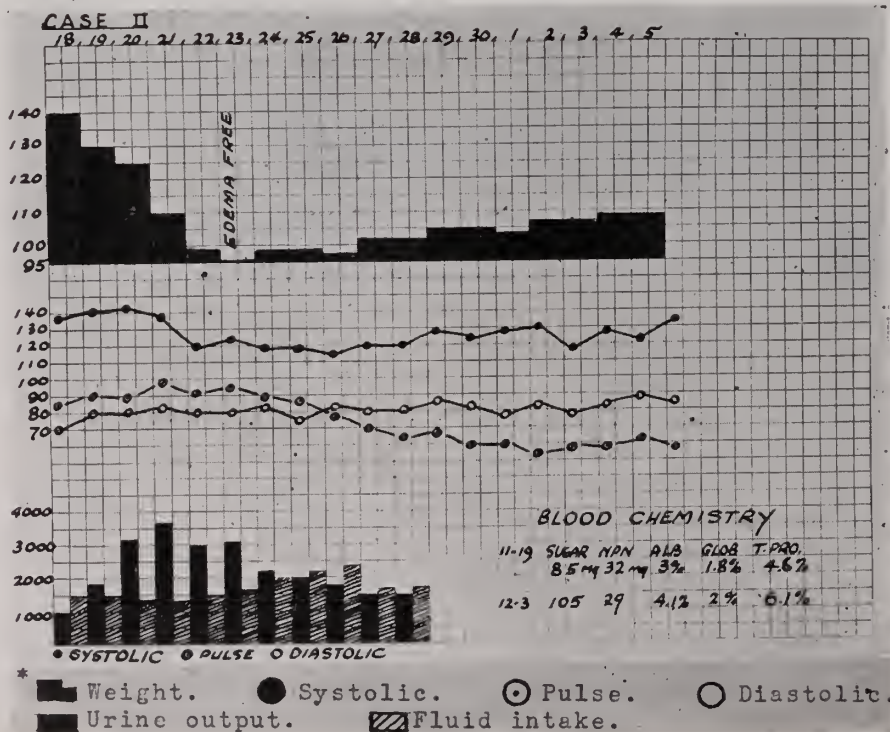
In the absence of infection, an increase in blood

pressure, a coronary occlusion, or a disturbance of cardiac mechanism, one is forced to conclude that some factor, probably nutritional, was operating in the precipitation of heart failure. The very prompt response to therapy, and particularly the marked reduction in cardiac size are similar to the clinical behavior of the beriberi heart. The dietetic history was not conclusive, but it indicated a marked preference for bread, fats and sweets.

These cases clearly indicate that a deficiency state, sub-clinical in degree, but sufficiently grave acting in conjunction with structural changes in the heart, results in serious heart failure. Varying degrees of a similar clinical syndrome are not unusual in any general medical ward. Absolute avitaminoses are probably rare in this country and hence the problem is not important. The subclinical avitaminoses are undoubtedly frequent and represent a real menace to the physical integrity of patients having organic heart diseases, particularly hypertensive heart disease and patients with coronary insufficiency.

C. Finally, the relation of recovery from heart failure to an adequate diet:

Patients suffering from vascular disease are prone to have gastro-intestinal symptoms, particularly gaseous dyspepsia and constipation caused by disturbances of intestinal tone and secretion resulting



from varying degrees of anoxemia of the gastro-intestinal mucosa and muscularis. Relief for these distressing complaints is attempted by a reduction in quantity and quality of the daily ration and by the use of purgatives. Such patients frequently live for years on the border-line of a deficiency state and, when congestive heart failure finally occurs—which further interferes with food intake—a deficiency state promptly complicates the primary illness.

A similar series of circumstances occurs in chronic valvular heart disease as failure ensues and, with the development of active failure, the food intake of a necessity is seriously reduced. It is obligatory that the food intake be reduced to the minimum requirement during the stage of active failure; however, the importance of the resumption of a "balanced" diet as soon as convalescence is under way cannot be too strongly recommended.

A review of the records of a large number of patients treated for heart failure shows that varying degrees of hyperproteinemia are almost universal. This depletion of plasma proteins not only acts synergistically with the increased venous pressure in producing a greater amount of edema, but it is at times the cause of irreducible heart failure and anasarca. Furthermore, it is a mirror reflecting the general deficiency state. And, finally, there is both clinical and experimental evidence that the removal of edematous transudates further depletes the tissue stores of vitamins, particularly those that are water soluble.

These observations have prompted us to use diets which contain complete proteins in quantities equivalent to at least 1 gram per kilo of normal body weight as soon as diuresis begins. Eggs and beefsteak are the proteins of choice; carbohydrates in quantities sufficient for a diet of 20 calories per kilo of body weight should complete the menu. This diet is supplemented by the addition of the protective foods in the form of vitamin concentrates, particularly vitamins B and C.

The final dietetic regimen should be designed so that the patient has a completely balanced diet, yet with the caloric value standardized to a value to maintain the body weight at a level approximately 10 per cent below the average standard body weight for that particular individual.

SUMMARY

In the general consideration of the problem of nutritional deficiencies as related to heart failure in organic heart disease, certain fundamental facts are relevant. B₁ avitaminosis can and does produce fatal degrees of heart failure in young and previously healthy individuals. This is illustrated by the heart failure seen in beriberi.

When one appreciates that the nutritional needs of the diseased heart are not only increased but that cellular metabolism is handicapped by the hypertrophy of the muscle cell and that varying degrees of coronary insufficiency frequently exist with a greater muscle mass, it becomes apparent that sub-clinical deficiencies may precipitate heart failure through the channels of increased demand and relative insufficiency of supply.

The cases reported appear to illustrate this clinical state. It is difficult to incriminate specific food factors, but the presence of hyperproteinemia in a large percentage of patients having congestive heart failure, and the marked amount of reducible enlargement observed in a few cases points conclusively to a lack of complete proteins, eggs, meat and milk and the water soluble vitamin B₁ in the daily ration. This is confirmed by the dietetic histories.

It is probable that patients with hypertensive heart disease who have varying degrees of coronary insufficiency are the most susceptible individuals to dietetic deficiency, and it is this type that is so consistently advised to adopt a diet deficient in these elements.

Pellagra does not affect the heart to a degree sufficient to impair its functional integrity. A study of a large number of pellagrins has so impressed this fact on us that we conclude that B₁ is not concerned primarily with the pathogenesis of pellagra.

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DISCUSSION

DR. P. S. SMITH, Abingdon: Food and nutrition are recognized as important factors in health and disease. It is gratifying, therefore, that those in position to make observations on large groups of patients are manifesting interest in the many phases of the subject.

Yet we should guard ourselves against unwarranted enthusiasm over the role of vitamins in disease. As was true of focal infections, the hormones, and allergy, we may again permit such enthusiasm to carry us to untenable positions from which we shall have to retreat later to a lower but firmer ground.

Dr. Porter's studies in the field of nutrition are very interesting and helpful. While not pertinent to his theme, the influence of vitamin A deficiency in the development of "night blindness" might well have been included in the list of deficiency states. This definite disease entity is becoming increasingly important in view of the alarming number of automobile accidents. Dr. Jeghers' studies of this food deficiency, as reported in a recent number of the *J. A. M. A.*, are significant.

A review of our records, totaling approximately 32,500 patients, reveals not a single case diagnosed as beriberi. Therefore, I am not in a position to discuss from personal observation its effect on the heart. Where the disease is endemic it is a well-recognized fact that beriberi, especially the so-called "wet" type, is frequently directly responsible for cardiac decompensation and sudden death. Such cases have been shown repeatedly to recover merely with rest and liberal allowances of vitamin B₁. In Dr. Porter's reported cases the evidence would have been more conclusive if the cardiac changes had been controlled without the use of digitalis and mercurial diuretics.

All students in this field are emphasizing the sub-clinical or atypical forms of beriberi, as evidenced principally by otherwise unexplained polyneuritis or vague cardiac disorders. Our records show the usual proportion of multiple neuritis, and it seems likely that some of them may have been the expression of a vitamin B₁ deficiency not clinically proven. In addition, there are thirteen cases diagnosed as "avitaminosis," suggesting either multiple nutritional deficiencies or else sub-clinical types not definitely identifiable.

Our records furthermore indicate that very few patients with scurvy are referred to hospitals in southwestern Virginia.

The diagnosis of pellagra has been made in seventy-seven cases, some of which were not typical. The case records of these pellagrins have been reviewed with the result that the findings substantiate fully Dr. Porter's studies and conclusions that pellagra, *per se*, is not an etiological factor in cardiac disease. While these patients were not studied routinely with orthodiagrams and cardiograms, their histories and physical findings show a relatively low incidence of organic heart disease. Of the seventy-seven patients only one (1.3 per cent) had evidence of decompensation, and this patient had a mitral valve infection presumably of long duration. Arteriosclerosis was noted in the elderly patients in about the frequency one would expect. Tachycardia was mentioned as an outstanding finding in six (8 per cent) and poor quality of the heart sounds in the same number. Systolic murmurs were heard in five (6.5 per cent); evidences of cardiac enlargement in nine (11.7 per cent), principally in the hypertensive patients. The average age of the patients was 44.7 years. It is believed that the percentage of cardiovascular changes in these pellagrins is not in excess of other patients of similar age.

Dr. Porter has emphasized the role played by chronic alcoholism, prolonged anorexia, vomiting and diarrhea in preventing ingestion or utilization of an adequate quota of needed vitamins, salts and calories. Patients on diabetic, nephritic and other restricted diets should be insured sufficient allowances of recognized vitamins and complete proteins. As Dr. Porter has stated, in this country it is the sub-clinical or atypical types of nutritional deficiency diseases that are probably being overlooked by most of us.

DR. WALTER B. MARTIN, Norfolk: The cases reported by Dr. Porter are very interesting, but I believe they may be susceptible to more than one interpretation. As I understand the essayist, he advances the idea that there is a relationship of the heart to the nutritional state, in the cases reported, not unlike that which has been recognized in beriberi; in other words, that we are dealing with a vitamin deficiency as a basis of the cardiac condition. It is noted that in one of the cases there is a very marked decrease of the serum protein. The serum protein in this case was at or below the critical level. At this level, unless there is a very definite restriction of the salt intake, edema will develop, and in this case edema was the outstanding clinical sign. Was this edema due to heart failure that developed as a result of vitamin deficiency and the resulting low serum protein? May not the heart muscle in turn be affected by the general condition of edema existing throughout the body? We frequently encounter cases of cardiac failure in which the ordinary methods of rest, digitalization, restrictions of fluids and of salts do not result in compensation, but which with the use of certain diuretic drugs and the constant elimination of the excess fluids may be compensated and thereafter remain compensated under proper restrictions. In other words, the edema itself establishes a condition in which compensation is difficult. It is my feeling that these cases reported fall in the category of edema not resulting from vitamin deficiency but dependent upon protein insufficiency. Hyper-

trophy may result from the edematous condition of the cardiac musculature similar to the general edema of the body. This does not affect the main lesson that may be learned from this presentation, namely, that a well-balanced diet and proper nutrition are very important factors in maintaining the cardiac efficiency of any patient. That is a very practical lesson, but as to the interpretation as to how it is brought about, I believe there is room for considerable difference of opinion.

DR. PORTER, closing the discussion: Mr. Chairman, I am greatly indebted to Dr. Smith for his very lucid and complete discussion of my paper. He pointed out many features which appear in the manuscript but which time did not permit me to bring out.

I am particularly impressed by what Dr. Martin has said. I am doubtful whether one is justified in concluding that cardiac enlargement is directly related to the presence of general edema. There is probably, in nutritional deficiency states such as beriberi, an intracellular edema of the heart muscle, but in the average case of generalized edema the size of the heart muscle is not related specifically to an edematous state of the myocardium.

This is particularly well illustrated by the presence of hearts of a normal size in those patients who have the so-called nephrotic edema.

The patients we are presenting did not have in any instance a reduction of the plasma proteins to the edematous level. You will note from the graphs that the albumin fraction, which is the important one in the control of the osmotic pressure of the blood, was only moderately reduced. The significant fact about the cases reported in this study is the tremendous degree of reduction in cardiac size. Our experience with a large number of patients with heart disease has impressed us with the fact that any significant reduction in heart size rarely occurs even though the symptoms of heart failure subside promptly. The only cases that we have seen in whom reduction in cardiac enlargement has been a significant factor of the clinical course have been patients with arteriovenous fistula, anemia and in the cases under discussion, namely, deficiency states. I think, therefore, that one is justified in stating that these cases answer all of the requirements outlined by Wenckebach many years ago when he first described the clinical features of the "beriberi heart".

A PROGRAM FOR ADEQUATE PREVENTION AND BETTER TREATMENT OF MENTAL ILLNESS.*

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The role of the social worker in carrying out a program for the prevention and treatment of mental illness is most important. In formulating a program one realizes fully that prevention and treatment go hand in hand. Prevention is a part of treatment and represents, when used in a wholesale manner, a more advanced and efficient means of combating and eliminating disease.

For purposes of this presentation we must consider a program for prevention of mental disease first, and then take up the matter of a better treatment program.

First, we take up prevention.

The following is a practical classification of mental disease offered for the purpose of orientation.

1. There is a large group due to organic or physical disease. Examples are:

- Neurosyphilis;
- Residuals of birth or post-natal trauma;
- Residuals of acute brain disease, as meningitis, encephalitis;
- Alcoholism;

Drug addiction;

Those due to overdose of various chemical or noxious agents;

Those associated with disorders of the glands of internal secretion, such as cretinism, myxedema, hyper- and hypo-thyroidism;

Also conditions due to nutritional deficiencies, such as pellagra;

Brain tumors, toxic-exhaustive psychosis;

Such definitely inherited conditions as hereditary mental deficiency, amaurotic family idiocy and Huntington's chorea.

2. We have, secondly, the functional psychoses, more particularly dementia praecox (schizophrenia) and manic-depressive psychosis. No physical cause for these has been determined. They usually require institutional care.

3. Thirdly, we have the borderline group, the part reactions. These include the psychoneuroses, the behavior problems of childhood, the constitutionally inadequate, etc. It is this group that occupy our especial attention in a preventive program.

The first group, consisting of conditions due to organic or physical disease, fall largely within the province of preventive medicine. The medical man

*Read before the Virginia Welfare Council and the Virginia Conference of Social Work, at Richmond, May 6, 1938.

should be trained in the medical school to recognize, evaluate, and consider in his treatment the psychological and emotional problems of the individual. The medical man should not neglect psychic factors; the psychiatrist should not neglect physical factors.

Selective sterilization, a surgical procedure, as carried out in the State of Virginia, is to be heartily endorsed as a measure calculated to control hereditary disorders. In this, Virginia is a pioneer, standing second to California only in this country. In Virginia there have been about 3,000 sterilizations performed, or approximately one-tenth of those in this country.

Selective sterilization was recommended by the American Neurological Association in the following order (arranged roughly in the order of importance in which sterilization seemed indicated):

1. Huntington's chorea and certain other hereditary neurological conditions;
2. Feeble-mindedness of the familial type;
3. Dementia praecox;
4. Manic-depressive psychosis;
5. Epilepsy.

In the State Colony for the Feeble-minded those individuals who might return to the community are sterilized. In the State Hospitals it is particularly the manic-depressive and dementia praecox patients who may return to the community and are apt to have children who constitute the bulk of the sterilizations.

There is now in progress a program of public education for the purpose of eradicating syphilis as far as possible. 10 per cent of admissions to the civil state hospitals have neurosyphilis either in the form of general paresis or of cerebral syphilis. Modern treatment by fever and tryparsamide enables state hospitals to return over 60 per cent to their homes, most of them restored to their previous efficiency and physical health.

The second group mentioned are the functional psychoses, particularly dementia praecox and manic-depressive psychosis. They are more properly to be discussed under treatment in the State Hospitals. Hereditary factors, constitutional make-up endowment, family training, environmental stress, physical disease, all operate in various combinations to the end that certain weaker individuals temporarily or permanently manifest a break in their integration.

Adolph Meyer's definition of schizophrenia says essentially the same thing: "it is a congerie of be-

havior difficulties having the same patterns, representing a disharmony of functioning, a progressive maladaptation to a load of environmental, physical and metabolic problems."

A program should embrace trained resources for recognizing and treating these dysfunctions. As regards heredity, sterilization and birth control help. Adequate medical care and preventive measures, though not ideal, surpass those in any other country.

A broad application of the principles of Mental Hygiene is absolutely essential in a satisfactory resolution of the psychic, emotional, familial, and environmental factors which underlie mental disease.

This introduces the third group, the borderline mental disorders; it also refers to the presumably normal, well-adjusted person.

Through the impetus of Clifford Beers, the National Committee for Mental Hygiene was founded. Through its guidance and direction over the past two decades we have felt the beneficial effects of its efforts in various psychiatric and allied fields. The child guidance clinics, through their intensive work by social worker, psychiatrist and psychologist, have furnished a wealth of practical information concerning pre-school and school children, as regards behavior and environment, superior children, children deficient in intellectual endowment, those with special disabilities, those with neurotic difficulties, to mention a few examples.

The consideration of this aspect as such is considered by others in this symposium. I am concerned here in their relation—these childhood problems in general—to frank mental disease. Too few of the cases carefully studied and treated in child guidance clinics have been followed on up into adult life for the actual results and lessons learned therefrom to be tabulated statistically.

Yet the incidence of these same disorders in the childhood history of our psychiatric patients is quite high. We find the following again and again in the past history of our mental patients: familial discord, lack of security on the part of the child, parental—particularly maternal—attachment, over-protection, poor environment, faulty habit training, improper guidance and placement in case of special disabilities, sibling rivalry, and a high incidence of physical illness of various kinds.

The public should be educated in its attitude towards mental illness. The old idea that mental illness is a disgrace is being relinquished. There is

no disgrace involved. The social worker in her work in the home is continually being impressed by psychiatric problems in the family, and presented usually by the children as behavior problems. It is the social worker's duty to tactfully refer the problem to a psychiatrist, who may furnish advice or treatment. The family and the patient, child or adult, should be encouraged to take an open, common-sense attitude towards the difficulty, and urged to have the difficulty evaluated, understood and treated as they would a medical disease.

The following incident illustrates the result of an objective attitude of a well-informed mother towards a depressed mental state in her son. After about two weeks of his moping about the house, disinterested, dejected and morose, yet holding on to his job, she said: "Tom, you've got to do something about this. If you can't tell father or myself what is bothering you and making you like this, I shall have to insist that you see a psychiatrist and perhaps he can help you where we can't." She did not feel ashamed or that it was a family disgrace. She saw him as an individual with problems which he was failing to solve, and recognized that he needed the help of an expert in their solutions.

So early recognition of mental illness and early treatment are to be heartily recommended in an adequate program for prevention and treatment.

What is the practical application of this to the social worker? Her training has developed her powers of observation, plus an objective detached attitude towards the psychiatric problems which she recognizes in the home, whether the child be a psychopath or a simple behavior problem, whether the adult be simply depressed, have a simple reaction to a difficult situation or be actively psychotic and need care in a mental hospital. Her knowledge of the psychiatric resources of the community will enable her to refer the case to the proper individual or organization—perhaps to a child welfare agency, to a child guidance clinic, to a juvenile court, to a general medical man, to a psychiatrist, or to a state mental hospital.

An adequate program for psychiatric care should allow provision for all these resources. Some communities provide these better than do others. The social worker must do her best with the resources at hand.

I cannot emphasize too strongly that almost invariably we find that the symptoms and complaints of

our adult psychiatric patients originated in childhood. Parents usually feel that they are raising their children in a proper manner. Through keen observation, the social worker will be able to detect a child's difficulties while visiting the home. If so, by tactful conversation with the mother, she may be able to learn more of the child's problem. Quite frequently mother, though she realizes the difficulties of her child, truthfully believes that the child will outgrow them. It is in cases such as this that a social worker could suggest referring the child to a suitable clinic or elsewhere.

Examples of symptoms meriting attention in children are: temper tantrums, night terrors, bed wetting, excessive shyness, sexual precocity, nail biting, seclusiveness and over-dependence.

Let us now discuss a program for treatment of mental disease.

First, what is the present status of our state hospital care? We are fortunate in having had a recent survey of the Virginia Mental Hospitals conducted in 1937 by the Mental Hospital Survey Committee of the National Committee of Mental Hygiene.

We have about 12,000 patients with mental disease in the State. The State Hospitals are considerably over-crowded. The provisions for medical and nursing care are quite inadequate. Virginia would have to increase its present medical staff nearly four-fold to meet the minimum standards of 150 patients per assistant physician established by the American Psychiatric Association. The nursing personnel should be doubled. The per capita expenditure per year is \$158.00 or about 43c a day.

During 1937 the State of Virginia spent on its State Hospitals 2.3 per cent of its total state expenditure. Massachusetts spent between 15 and 20 per cent of total state expenditure on its state hospitals. The whole of the United States spent on its mentally ill over 5 per cent of its total state expenditures.

So we may say that up until recently Virginia ranked well down in the lower half of the States in the usually accepted standards of state hospital care; also that we are now in a state of transition in State Hospital care.

The Mental Hygiene Society of Virginia was organized a little over a year ago and in it are represented almost every field of medicine and social welfare. Important among its initial objectives are aiding in the prevention and treatment of nervous and mental disease in the State. The program which

I heartily endorse, which I would have from my own experience considered indicated, coincides entirely with the recommendations and objectives of the State Mental Hygiene Society.

The present State Hospital medical staffs are greatly overloaded. There is now only one psychiatrist to over 400 patients. If the State Hospitals of Virginia are to be adequately staffed there should be one psychiatrist to at least every 150 patients. Under the present situation, all that one physician can hope to do is to furnish the patients with brief initial examinations, take care of their immediate medical and surgical needs and see that they are furnished sympathetic but nevertheless largely custodial care. It does not permit the continued individual attention and psychiatric treatment which would be possible if there were more physicians. It does not permit a careful study and evaluation of each patient's particular physical and psychiatric problems. As a result, a great many patients are not able to receive certain specific types of treatment or medication which would be most efficacious in their particular instance. The present inadequate number of physicians does not permit an adequate follow-up and supervision of those patients who become well enough to leave the hospital and are paroled. In modern State Hospitals, one physician and one social worker may well devote their full time to seeing and taking care of the paroled patients. The present overloading of physicians is apt to result in the physician losing interest in psychiatry as such and in his failing to have time to follow the literature, visit other psychiatric clinics and undertake research work in his particular hospital.

There should be an increase in the number of qualified psychiatric nurses, psychiatric social workers and occupational therapists in the State Hospitals. The hospital cannot hope to center its activities and interests efficiently about the treatment of the patient without these departments being more adequately staffed.

The psychiatric nurse is with the patient during his stay in the hospital itself. She is indispensable to the physician, and is the chief person in the hospital family circle who administers to the emotional requirements and needs of a mentally sick patient—one who is away from home and who must needs make an adjustment in the new environment. It is rather generally agreed that female psychiatric nurses on male wards work out most satisfactorily,

and it is surprising how well disturbed wards run when there is a female nurse on the wards.

The psychiatric social worker in her work in connection with State Hospitals is invaluable; first, in obtaining and supplementing the history of the patient's past life, development of present illness and full understanding of the home situation. Secondly, because of her specific training, she is able to study and describe accurately to the physician the home situation to which the patient is to return. She is able to obtain suitable jobs or placements and prepare the relatives for the return of the patient, and enlist their cooperation. Thirdly, she, in the parole clinic, can follow the course of the paroled patients in their homes; cooperate with the physicians in necessary readjustments and in such supervision as may be necessary. As this parole system has not yet been worked out to this extent in the State of Virginia, it constitutes a most important part in the program for the care of mental patients.

It is my feeling that as time goes on, we may be able to develop a system of family care in this State. Such a plan has worked satisfactorily elsewhere and by this plan, certain approved families can board patients who have been in mental hospitals for a sum satisfactorily covering their maintenance; thus suitable patients can be provided a home environment who may happen to have no home of their own to which to return.

An adequate program should provide larger appropriations so that adequate food, medicine and special treatment procedures can be applied to patients in the maximum number to the maximum extent. For example, encouraging results are being obtained from insulin treatment, sufficiently encouraging to justify its continued trial under control and conservative guidance. This treatment requires considerable expense and its administration throws a tremendous load on the nurses and physicians.

An adequate program should contain two psychiatric departments and research centers in connection with the two Medical Schools. These centers would serve as a place of instruction for medical students so that those who go out in general practice or into the various specialties will have a fundamental and working knowledge of psychiatry and the principles of Mental Hygiene. These centers will serve as a training center for social workers and provide special seminars, lectures and supervised training in psychiatric social work. These centers

would contribute enormously to our need for psychiatrically trained nurses. They would furnish a center in which the physician in the State Hospitals and, perhaps later, general practitioners may come and take special courses. In certain other states, physicians in State Hospitals have worked in close association with these research centers in special study of instructive clinical and pathological material and through these research centers many notable scientific contributions have been made.

An adequate equipping of State Hospitals in all their departments should include provisions whereby the Hospital can serve its community not only in caring for those needing institutional treatment but by providing psychiatric clinics in various strategic communities. The staff should enter actively into the Mental Hygiene program of that section of the State which it is serving. In a State Hospital one full-time physician on the parole service with a social worker and a psychologist plus stenographic help, might not only adequately follow up and supervise the paroled patients from the Hospital, but conduct about ten psychiatric clinics located in neighboring towns.

It is felt that every forward-looking citizen earnestly desires that a State Hospital system be eventually attained which would realize all these goals, yet it is nevertheless difficult to see how such a desirable state can be attained without provisions for a central organization, a well-organized State Department of Mental Hygiene headed by a trained psychiatrist. Perhaps the most important of all the suggestions endorsed by the Mental Hygiene Society of Virginia is the recommendation that such a department be provided. Should this come about, the next few years, say five years, would be largely taken up with making uniform present practices and procedures in the State Hospitals. Certain additions to the various hospital departments will be needed before much activity can be directed towards extra-mural activities. By this I mean that we are not now doing nearly as much in the adequate study and treatment of our patients as we would if we were more adequately staffed.

The following, briefly, should be represented in the organization of the medical portion of the adequate State Hospital:

Assistant Superintendent, Clinical }
Director and Assistant Physicians, } One to 150 patients.

Psychiatric social workers,
Pharmacist,
Pathologist,

Consultation Staff { Surgeon,
Internist,
Eye, ear, nose and throat man,
Roentgenologist,
Neurologist.

Dietitian,
Superintendent of Nurses,
Nursing Supervisors,
Trained Nurses in charge of Wards, particularly medical and surgical unit, reception service, acute medical wards, infirmary, tuberculosis pavilion.
Ratio of nurses and attendants to patients of one to eight.
It is now nearly twice this much.
Trained attendants.
Occupational therapy department.

In general, we have one-half as many physicians and attendants as we should have. A program should endeavor to supply the recommended number in four biennium periods, or in eight years. One physician per year should be added in the smallest of the State Hospitals with nearly 1300 patients, two per year in the largest, namely, Central State Hospital.

The heads of the various key departments should be filled now. This refers to psychiatric social worker, superintendent of nurses, dietitian, and occupational therapist.

In conclusion, a program for adequate prevention and treatment of mental illness in this State should be under the guidance of a central suitably qualified head. In preventive work, some activities would be under his direct control, some in cooperation with other groups, for instance, the Department of Public Welfare, the Schools, the Public Health Service, and the Courts.

In the treatment of frank, outspoken mental illness needing institutional care, the State Hospitals and Institutions for the Feeble-minded should be provided with personnel suitably trained and in sufficient numbers to provide adequate treatment for all patients.

In this treatment of the mentally ill in State Hospitals, a central head is essential. Under him, a co-ordinated and planned program of adequate expansion and improvement at all Hospitals can be attained. Meanwhile, and certainly within a few years, the State Hospitals should by all means be enabled to extend their activities more and more into the mental health problems of the community.

THE CARE OF INFANTS WITH ALLERGIC ECZEMA.*

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The most prevalent skin disorder of infants is eczema. There are several types of so-called eczema, but the majority appear to be allergic or atopic in nature. Physicians have to a certain extent realized that, but have felt that the use of evaporated milk or the reduction of the fat content in the formula plus the employment locally of soothing ointments or X-ray therapy is all that is needed. A few of the infants with slight eczema might respond with such care, but unfortunately those with modern or severe allergic eczema continue to have that disorder until a year or two of age or in a few instances for many more years. Until recently it was not generally realized that such a large per cent of infants with allergic eczema of all grades subsequently developed asthma. With such an undesirable future staring us in the face, it behooves us not only to attempt to overcome the local lesion, but to remove the underlying cause. Such a search requires much detailed work and complete cooperation of parents.

When confronted with an infant who has eczema, in addition to the usual pediatric history, physical examination and routine laboratory tests, a longer and more detailed history of the past and present should be taken. Outstanding points of interest in the history are date of onset and location of eczema, consistency of rash, formula changes, time and manner in which foods were introduced, influence of temperature and environment. Other associated allergic symptoms are sneezing, itching, wheezing, coughing, colic, croup, vomiting, head colds, mucus in stools, markedly constipated stools, type and frequency of stools, association with animal pets, type of face powder and insect spray used, seasonal change, immunizing agents and sera injected, type of surroundings, the kind of pillow and mattress used, and rugs, curtains, and toys in household. When some suggestive information is found, a further search is to be considered along those lines. It is, of course, to be remembered that heredity plays a large part in allergic eczema.

At times it is difficult to get optimum information from direct skin scratches or intracutaneous tests

on eczematous skins. This is likewise true among those who have frequent attacks of urticaria and angioneurotic edema and among individuals who have dermatographia or some peculiar shade of skin. Owing to the constant struggle of testing an infant with cutaneous tests and worse still with many intracutaneous ones it is frequently better not to attempt direct skin tests. Fortunately, equally as reliable or even better information can be obtained by transferring the serum of an infant with allergic eczema to another person¹ (preferably a non-allergic adult). The serum is injected intracutaneously in amounts of .05-.1 cc. into the outer arm of the non-allergic individual. The wheal thus formed is outlined with ink. After an interval of two or three days, ten to twenty of these areas are tested daily. The allergic solutions are injected intradermally in an outlined area as well as outside of it. In this manner each substance injected has a control. If the local reaction is larger in the outlined area than outside of it, it indicates skin sensitivity of that substance. In this manner we obtain a list of the foods and inhalants to which eczematous infants are shown skin sensitive. The infant is taken off those foods and so far as possible and practical, inhalant substances are removed. In some instances the eczematous one is hyposensitized by injections of the group of inhalants to which he was shown to be skin sensitive.

It is, of course, realized that positive skin tests do not necessarily indicate present trouble; they may indicate past or future sensitivity and at times they appear to be in no way connected with the case in question. All positive skin tests should be correlated clinically. Such correlation can be accomplished by removing from the diet all foods to which definite positive skin tests were obtained; then, within a few weeks or months after the allergic patient appears symptom free, reintroduce one new food every three days. If no unfavorable reaction develops within three days, that food can probably be taken once or twice a week.

While there are arguments *pro* and *con* concerning cutaneous and intracutaneous testing, I feel that from a comparison of both the latter are far more reliable, especially so among eczematous in-

*Read before the sixty-eighth session of the Medical Society of Virginia at Roanoke, Va., October 12-14, 1937.

infants in which passive transfer tests were done. Another contended point is the value of elimination diets as advocated by Rowe². In as much as it often takes several weeks for an eczematous area to clear up after one or more allergic foods are removed from the diet, we can readily see the task we are up against and the improbability of optimum result being obtained from such a diet. Where one is unable to get the advantage of a detailed and complete allergic study in which intracutaneous tests are used (especially in passive transfer areas), one is justified in attempting elimination diets. It should be borne in mind that intracutaneous tests in untrained hands are not devoid of danger.

The majority of cases with allergic eczema are primarily due to food sensitivity, but many have an additional factor, namely, inhalant substances. Those foods which are perhaps most frequent etiological factors for infants with eczema are milk, eggs, wheat, tomato, apple, orange juice, pineapple juice, beans, peas, potato, and fish oils. Those inhalants that give the most trouble are chicken and goose feathers, cat and dog hair, and kapok. Occasionally we see an infant with pollen eczema. It is frequently noted that food substances which have never been in an infant's diet, as eggs, are often factors. Ratner³ has shown that infants become sensitive to foods *in utero*, and Talbot⁴ and Shannon⁵ have demonstrated passage for foreign protein substance through breast milk. It is also possible that milk sensitivity produces some immunological change in the skin and therefore renders it more susceptible to any protein substance. If the child is sensitive to any protein in the mother's milk it is not necessary in most instances to remove him from the breast, as information can be derived from the history and direct or indirect food tests to find the offending foods. By elimination of those positive reaction foods from the mother's diet, the baby's allergic eczema usually clears up.

It is to be remembered that when giving instructions for substances to be avoided either in the diet or environment, we should thoroughly acquaint the parents with the common sources of such, in order that they may more intelligently avoid them or contact with them. Experience has shown that it is not without danger to attempt smallpox vaccination with infants who have atopic eczema.

In order to get the optimum results and to avoid future allergic tendencies, especially asthma, it is

necessary in the majority of cases of allergic eczema to conduct a most thorough investigation. Such a study represents a detailed history, in addition to routine pediatric questions, the usual physical and laboratory procedures, plus a nasal smear in many instances and a larger number of direct or preferably indirect skin tests. The intracutaneous tests in passively transferred serum give the most information. Simply to care for a child with infantile allergic eczema by frequent formula change or soothing ointments or X-ray therapy may eliminate or reduce the present eczema, but in such instances no attempt is made to remove the cause or prevent future allergic manifestations. Soothing ointments are indicated while attempting to find the cause or causes. Where milk sensitivity is a factor milk substitutes should be used. In most instances inhalant substances as well as foods are primary or important factors. In such cases hypo- or desensitization is at times imperative. We must remember to treat the child who has the allergic eczema and not simply the eczema.

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DISCUSSION

DR. J. M. BISHOP, Roanoke: I want to demonstrate two cases that I have picked up in the last month. I tried to get a colored moving picture of these two, which demonstrates very nicely a generalized dermatitis. It is what we all call eczema when we see it.

The first case I saw at three and one-half weeks of age. The child had persistent projectile vomiting. You can see the scar from the pyloric operation. It is my first experience with congenital pyloric stenosis in a female. The usual ratio is about two males to one female, but from my personal experience is eighteen to one. This child had a primary scabies skin lesion. It was very much neglected and later the rash was suggestive of iodism or bromism type of rash. The second case is more of the seborrheic type with an impetiginous cradle-cap.

I wished to show this picture because it demonstrates two very severe generalized rashes, neither one of which comes under the heading of Dr. McGee's paper.

On the question of allergic skin diseases there is room for considerable argument. The so-called scratch test, in my experience, is absolutely useless. For instance, in either one of these children it would have been impossible to find a place to make the test. The passive transfer intradermal tests are very frequently of value and help in working up the case.

There are several theories that enter into the discussion, and I do not know whether it is advisable to attempt to go into them. It is generally recognized that if the mother is allergic the antibodies may pass through the placenta; also, if the mother takes an excess of one type of protein the antigen passes to the fetus, and after birth the infant develops his antibodies and thereafter is sensitive to this protein. In addition to proteins passing through the placenta, the unsplit proteins pass through the mucosa of the digestive tract. This is most marked during the neonatal period. In other words, in the first forty-eight hours of life I think it is inadvisable to give cow's milk to an infant as it has been demonstrated that unsplit proteins enter into the circulation. It has also been demonstrated that the first time a child takes cow's milk some unsplit proteins get into the circulation and that the child will temporarily show a positive intradermal test to the milk protein. This is a normal, everyday occurrence. As the child continues on with the milk he will develop immunity and the positive skin test disappears. The same thing happens in the so-called atopic or allergic individual, except that he does not straighten out and develop immunity later. The majority of infants four or five months of age that are sensitive to any one thing are usually sensitive to several. Egg white seems to be one of the offenders in almost 100 per cent of the cases. I saw a child some months ago, at five months of age, which the mother had given, for the first time, she said, a taste of soft egg, including the yolk and the white. Within thirty minutes the child was in shock, and it later developed angio-neurotic edema and a generalized dermatitis.

The history is extremely important. The only case of eczema I have seen due to cod-liver oil developed a few weeks after beginning cod-liver oil.

If the eczema of an allergic infant can be reasonably controlled, immunity develops and there is less danger of asthma or some other form of allergic manifestation in later life.

DR. WYNDHAM B. BLANTON, Richmond: At the Medical College of Virginia cases of this character are referred to the Immunology Clinic. In our experience, food is usually the cause of this type of skin disease. On the surface it would appear a very simple problem,—much more simple than in the adult, for the reason that the individual is much more corrigible and the diet is much more easily limited. But, after all, it is not so simple, because of the difficulty of making the tests, the difficulty of trial diets and the difficulty of carrying them out. Although I agree with the essayist's view that an allergic child may in later life become asthmatic, on the other hand it must be remembered

that very many of these children spontaneously get well of their eczema if you do nothing about it. I think that is common experience. In spite of what we do, or if we do nothing, they still grow up to be healthy adults.

DR. FRANK D. WILSON, Norfolk: There are two questions I should like to ask Dr. McGee. First, does oatmeal often enter into the cause of skin eruptions in young children? I have occasionally seen children with a severe generalized eruption recover within ten days by simply taking oatmeal from the mothers' diet. In the second place, does not house mold play a very considerable part in dust allergy?

DR. MCGEE: I appreciate the discussion. I was glad Dr. Bishop showed the other types of so-called eczema that are apparently not allergic eczema. We see those, unfortunately, too frequently, and sometimes it is very hard to tell with what we are dealing. But by looking constantly for the cause we are able to differentiate them. I never did feel that milk crust or cradle-cap or whatever you want to call it was eczema. I think it is seborrhea—whatever that is.

Don't think we go around testing everyone. I had an infant that was three months old. During that time it had milk, had orange juice, had fish oil. Then, at three months, it developed eczema. I questioned the mother carefully and found that the child had had it for about ten days. I questioned the mother carefully again and learned that chocolate and strawberries were the things the mother had added to her diet. She eliminated those, and the child got well. Later it had another attack, and I found that the mother had eaten cucumbers. She eliminated those from her diet, and the child got well. There is no question that the history is very important.

As to the reaction from egg, sometimes there is a terrific reaction from egg. Sometimes a mother will eat egg and then kiss the child, and the child will develop a severe reaction around the mouth from egg.

It is much easier, as Dr. Blanton said, to control the diet in children than in adults, who say: "Well, I enjoy this; I will eat it once in a while."

As to Dr. Wilson's question about oatmeal, I think oatmeal is one of the least offensive of the cereals. Barley and corn are by far the worst offenders. Incidentally, an allergic individual should never be given mixed cereal with which to begin.

As to Dr. Wilson's question about house mold, I do not believe that house mold is a very important factor.

DR. J. C. FLIPPIN, University: Dr. McGee was emphasizing the importance of the treatment of these children in after life. How do you prevent the child with an allergic history from becoming an allergic adult?

DR. MCGEE, closing the discussion: That is a right big order, Dr. Flippin. If we can eliminate these main factors early in life, such as milk and eggs, we realize that many of them will not develop tolerance later—not always, of course. But if you can eliminate the major factors, the others will take care of themselves. You might say the scar is forming, and the less scar that forms the less the potential danger.

As to milk, if you have a child who apparently is sensitive to milk, don't hesitate to use a milk substitute. We know that the whey is the most important factor in causing these allergic eczemas, and you can eliminate the whey by

boiling. If the casein is the factor, you have to stop milk, because you cannot get rid of the casein. You cannot get rid of it by using evaporated milk, as the commercial houses try to make you think.

DETERMINATION OF URINARY EXCRETION OF VITAMIN C (ASCORBIC ACID).*

THOMAS D. WALKER, JR., M.D.,
Newport News, Virginia

There has been much fetishism about vitamins but this is giving way to a more rational understanding and use of these food substances. These food substances were originally called "accessory food factors" but they have been found to be so necessary in the diet that the word essential has been substituted for the word accessory.

There is justification for placing vitamins as a whole in a functional group of nutrients but the objection to this is that specific pathology, the result of specific inadequacies in the diet, may be overlooked.

At the present time interest is directed toward determining the specific effect upon the body of a specific vitamin, e.g., anti-toxic and anti-infective powers; haematopoietic stimulation; mineral metabolism; intestinal dysfunction; and the effect upon nutrition. The most promising aspect of this situation is the headway being made in clinical and laboratory tests and improved clinical criteria by which border-line cases of deficiency disease may be recognized. There is no doubt but that a large part of our population is in the border-line group.

Economic status, diet fads, the presence of disease, ignorance about foods and the body requirements, even by the intelligent, all operate to the end that many individuals exist on suboptimal diets. Lord Kelvin has said "When you can measure what you are speaking about and express it in numbers, you know something about it, but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a vague and unsatisfactory kind." Since it has been possible to measure vitamin C and express its quantitative existence in the body in numbers, its effect upon metabolism has been more definitely studied and more satisfactorily understood.

In 1932 King and Waugh isolated a crystalline substance from lemon juice which possessed anti-scorbutic powers. The chemical structure of this substance proved to be vitamin C. In this country it was given the name cevitic acid and in Europe ascorbic acid. Even before the isolation of this vitamin from lemon juice Clark and his associates had used a dye, dichlor-phenol-endo-phenol to differentiate synthetic from natural fruit juices. After vitamin C was isolated in pure form there was given to clinicians a laboratory test for the quantitative study of its presence in the body by the use of this dye.

The quantity of this vitamin in the body depends upon intake and therefore varies; optimal, sub-optimal and clinical. The urinary excretion, being dependent upon intake, also varies, ranging from zero to several hundred mgm. daily, the average being ten to thirty mgm. Van Eckelen and associates and Johnson and Zilva say that optimal ascorbic acid supply can be maintained by some fifty mgm. per day. When more than that amount is consumed seventy to eighty per cent is excreted in the urine within eight hours. A table* by Fellows gives the amount of fruit and food necessary to supply 0.5 mgm. ascorbic acid:

| | |
|-------------------------|-----------|
| Fresh Orange Juice | 1.2 Grams |
| Frozen Orange Juice | 1.4 " |
| Canned Orange Juice | 1.1 " |
| Fresh Grapefruit Juice | 1.3 " |
| Canned Grapefruit Juice | 1.5 " |
| Canned Pineapple Juice | 8.0 " |
| Canned Tomato Juice | 2-7 " |
| Fresh Sweet Cider | 5-7 " |
| Fresh Tomatoes | 2-3 " |
| Canned Tomatoes | 2-5 " |
| Canned Tomato Soup | 5.6 " |
| Fresh Peas | 3.6 " |
| Frozen Peas | 4.6 " |

*Read before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, Va., October 12-14, 1937.

*From "The Avitaminosis," by Walter H. Eddy, Ph.D., and Gilbert Dalldorf, M.D., The Williams and Wilkins Company, Baltimore, Md.

| | | |
|------------------------------------|--------|-------|
| Canned Peas | 8.8 | Grams |
| Fresh Asparagus (Green) | 8.0 | " |
| Frozen Asparagus (Green) | 8.0 | " |
| Canned Asparagus (Green) | 10.0 | " |
| Cooked Fresh Spinach | 8.0 | " |
| Canned Spinach | 7.5 | " |
| Cooked Snap Beans | 11.0 | " |
| Canned Snap Beans | 13.0 | " |
| Fresh Pineapple | 8.5 | " |
| Fresh Apple | 3.5-25 | " |
| Baked Apples | 4 | " |
| Apple Sauce | 30 | " |
| Canned Apple Sauce | 36 | " |
| Fresh or Frozen Strawberries | 2.5 | " |
| Fresh Blueberries | 5.5 | " |
| Fresh Cherries | 16. | " |
| Fresh Bartlett Pears | 14. | " |
| Cranberries | 3-4 | " |
| Cranberry Sauce | 10-14 | " |

PATHOGENESIS

Pathological changes which take place as the result of an inadequate supply of vitamin C usually develop insidiously. The most frequent pathological change takes place in the blood vessels. The endothelial cells lining the blood vessels fail to form sufficient cement substance, the vessels become weak and bleeding results. This may vary from petechiae to huge extravasations. The petechial hemorrhages in the skin occur about the hair follicles, sweat glands and skin lesions while the large extravasations follow fascial planes.

Bleeding, the result of an insufficient amount of this vitamin in the diet, may manifest itself in various ways; in the new-born, uterine, intestinal, in some cases of dysentery, purpura hemorrhagica, etc.

Gingivitis in the child with swollen, bleeding gums and in the adult with retracted, infected gums and foul breath, is often due to the same cause. A secondary anemia is often the result of sub-optimal scurvy and this type of anemia does not respond to iron but does improve and reticulocytes are stimulated by the giving of vitamin C.

Another manifestation of an insufficient supply of vitamin C is disturbed mineral metabolism. This is seen by improperly formed teeth, decayed teeth and the "Trummerfeld Zone" at the end of long bones in children and by osteoporosis in adults. The cortical bone change in scurvy and senility are similar in that there is rarefaction and fracture may easily occur with delayed healing.

Another evidence of vitamin C depletion is changes in the muscle. This muscle soreness or

pain may be mistaken for rheumatism. Weakness which is often associated with vitamin depletion is thought by some to be due to this muscle involvement.

The nervous system is likewise frequently involved and palpitation, paresthesia, anesthesia have been reported.

There has been the attempt to define a specific role to vitamin C as well as to other vitamins as to the part they play in increasing the resistance to infection. Mellanby first applied the term anti-infective to vitamin A several years ago and since that time there has been much criticism of the term. Certainly it is accepted that individuals on a deficient dietary are more susceptible to infection than individuals on an optimal diet. The results of study, however, tend to show that resistance to infection is caused by constitutional changes in the body when taking a normal diet rather than to a specific effect of the vitamins on bacteria or the production of anti-toxic substances.

METHOD OF STUDY

Urinary studies are less technical and more practical, although more variable than blood studies.

Much has been said about the reducing substances in the urine, e.g., cystin, glutathione, thiosulfate, glutamic acid and other sugar decomposition products interfering with the urinary determination of vitamin C. Dalldorf says that "None of these substances occurs in sufficient amounts to interfere seriously with determination of urinary vitamin C and the tendency has been to disregard them."

Urinary determinations should be done soon after voiding or the urine acidified with 10 per cent by volume of glacial acetic acid, placed in the ice box and examined within six to eight hours. The indophenol solution should be fresh and not used when more than three days old. The titration should be done quickly, not consuming more than two or three minutes.

One indophenol tablet is dissolved in 50 cc. of distilled water, 20 cc. of urine is placed in a flask and acidified with 2 cc. of glacial acetic acid. The indophenol solution is then added to the urine either from a buret or pipette calibrated in 0.1 cc. until the urine turns slightly pink. The pink color should persist for at least thirty seconds. The vitamin C content of the urine is then calculated as follows:

Each cc. of the indicator equals .02 mgm. of ascorbic acid. If 10 cc. of the indicator was used in

titrating 20 cc. of urine, the ascorbic acid content of the urine would be ten times .02 mgm, or 0.2 mgm. The ascorbic acid content of 100 cc. of urine would be five times .2 mgm. or 1.0 mgm.

If the procedure is reversed and the urine is run into the dye, the end point of discoloration is more easily determined. Dissolve one tablet in 100 cc. of distilled water. Place 10 cc. of this solution in a flask, add one or two drops of glacial acetic acid until the blue color changes to pink. Titrate the urine into the dye solution until the pink color is just discharged and the solution is colorless. Record the number of cc. of urine used. The ascorbic acid content of 100 cc. of urine will be ten (the quantity of dye used) divided by the number of cc. of urine required to discolor the dye solution: $\frac{10}{NCC} = \text{mgm. ascorbic acid.}$

CASE HISTORIES

CASE 1. M.D., age five years. One year ago she had asthma and her diet was restricted. This restricted diet was continued without consulting her doctor. She had not been taking any of the citrus fruits nor tomato juice. She came because of red, dry, scaly hands and feet. A diagnosis of acrodynia was made.

Laboratory studies revealed 9,400 white blood cells and 4,050,000 red cells per cmm. The hgb. was 62 per cent.

The urine showed no albumin or sugar and the urinary vitamin C was 5 mgm. per 100 cc.

Treatment consisted of increasing the diet with the addition of seven ounces of orange juice daily which supplied approximately 100 mgm. of ascorbic acid and 10 drops of Oleum Percomorphum 50 per cent which supplied approximate 40,000 units of vitamin C.

The urinary ascorbic acid increased to 5 mgm. per 100 cc. of urine. Improvement has been continuous.

CASE 2. R.F., age fourteen months. Allergic, was put on *Sobee* and mother did not return for diet supervision. Child had no citrus fruits nor tomato juice. After several months the patient returned because of pain in the right leg, bleeding gums, hemorrhage in left upper eye lid, and was unable to open eyes.

White blood cells 10,300, red blood cells 4,000,000, hgb. 60 per cent. An X-ray showed hemorrhage at lower end of right femur.

Urine was negative for albumin and sugar, ascorbic acid content 6 mgm. per 100 cc.

Treatment consisted of giving 200 mgm. of cevitamic acid tablets daily. Forty-eight hours after beginning cevitamic acid, the urinary ascorbic acid had risen to 2 mgm. per 100 cc. and the child felt much better.

Two ounces of orange juice was added to the diet daily and four days later the urinary ascorbic acid had risen to 10 mgm. per 100 cc. Pain in leg disappeared, swelling in eye subsided, and improvement continued.

CASE 3. B.J., age fifteen months. Very restless at night, sleeps on all-fours. Was getting an excessive starchy diet and had not had citrus fruits or tomato juice for many months.

White blood count was 7,400, red blood count 3,840,000, hgb. 55 per cent. Urine negative for albumin and sugar, ascorbic acid content 1 mgm. per 100 cc. Treatment consisted of decreasing starch in the diet giving more fruits and vegetables with the addition of 200 mgm. of cevitamic acid daily.

Urinary ascorbic acid rose to 10 mgm. per 100 cc. The increase of red cells and hgb. was more rapid than usual on a vegetable diet. The night terrors disappeared.

The rapid improvement cannot be attributed solely to the addition of cevitamic acid, but the rapid improvement of the blood and the relief of nervous symptoms are significant.

CASE 4. B.M., age six years. Underweight, hair and skin dry, teeth decayed. White blood cells 9,200, red blood cells 3,742,000, hgb. 52 per cent. The diet consisted largely of starches and vegetables, no milk, citrus fruits, tomato juice nor cod liver oil.

Milk was added to the diet, starches reduced and two ounces of orange juice and iron were given daily. There was some improvement but the urinary ascorbic acid remained low, .2 mgm. per 100 cc. The orange juice was increased to eight ounces a day. The vitamin C in the urine rose to 8 mgm. per 100 cc. There was a marked improvement in the anemia with reticulocytic stimulation.

CONCLUSION

There is no desire to stress the importance of vitamin C more than other food requirements. It lends itself to study more definitely than some of the other essential nutrients, therefore its effect upon the body has been more closely observed. The few

cases reported are representative of a larger group.

The urinary determination of vitamin C is not a specific test for any disease but is a test for body saturation.

Individual requirements vary greatly and there is at least presumptive evidence that the amount of orange juice given at the present time is not sufficient for optimal nutrition.

Vitamin C decreases in the urine in acute infections and in many morbid states. This would indicate that larger amounts than normal should be given during illness.

With our present knowledge it is impossible to say when one zone merges into another but there is suspicion that there is a disturbance of metabolism when less than 10 mgm. of vitamin C is excreted daily.

It has been suggested that our theories concerning the hemorrhagic diathesis should be re-examined in the light of the newer work on vitamin C.

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DISCUSSION

DR. FRANK D. WILSON, Norfolk: It is very difficult not to get too enthusiastic about the treatment of scurvy with ascorbic acid. One who has seen scurvy treated with orange juice feels that it is rarely necessary to use anything but orange juice. Recently I had a case come in with pseudo-paralysis. I was very much afraid the child had had infantile paralysis. It was very sensitive to touch and cried when one attempted to move it. The gums were bleeding. I found the child was being fed on evaporated milk and was being given canned vegetables of one of the very popular brands for babies. It was receiving no fresh vegetables and no fresh fruits. I thought it a good opportunity to find out what orange juice would do and told the mother to give her one ounce of orange juice daily. The mother asked if I were not going to give some medicine, and I said no medicine was necessary. I told her to give the child an ounce of orange juice daily and bring it back in seven days. They returned on the sixth day, because the mother found it would be impossible to come on the seventh day. The child, from a cranky, irritable, listless child, was happy and ran about and played. It was hard to realize that such a change could be made simply by the use of orange juice.

In small babies it is not always possible to get a twenty-four-hour specimen of urine. Therefore one could use the method used by Abt and Epstein. They took blood, deproteinized it, then titrated it against an indicator. In those cases where the urine cannot be obtained one might use this method.

I am glad Dr. Walker called our attention to this subject, because it is a very important one.

DR. WALKER, closing the discussion: Dr. Wilson's thoughts, of course, are well taken. In the case he described certainly no urinary test was necessary for the clinical manifestations were self-evident. My thought is directed toward the large group of children and adults as well, that have no clinical evidence of avitaminosis.

I am not a fanatic about vitamin C or any of the vitamins but I am convinced that the majority of individuals, both children and adults, get insufficient vitamins.

The urinary determination of vitamin C is another helpful step which will aid us in trying to find out a little more about our patient.

COLIC (GASTRO-ENTEROSPASM).

W. EUGENE KEITER, M. D., F. A. A. P.,
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Definition: Colic, or gastro-enterospasm, in young infants is a painful disturbance of intestinal motility, without anatomical abnormality, in which excess gas cannot be expelled normally through the anus.

Frequency: Of two-hundred-seventy-five office patients seen during the first four months of life, sixty-one had colic severe enough to require special treatment. The incidence was about 22 per cent. The lower the age limit is placed, the higher the incidence becomes. An accurate record of residential practice probably would reveal a much higher incidence.

Etiology: Colic, or gastro-enterospasm, is invariably associated with excess gas in the intestinal tract. The expression "excess gas" is used advisedly. Sometimes there is so much gas the mother can hear borborygmus in the baby. At other times even a small bubble will cause very severe pain. Actually we do not know just how much gas should be considered normal in any particular case, or how to measure it. Older infants and children may have a large amount of intestinal gas without any apparent discomfort. It is not the gas, *per se*, which causes the pain, but the reaction of the bowel to the gas. Perhaps it is more correct to attribute it to the degree of tension or pressure under which the gas occurs.

It is conceivable that older children may become "conditioned" to the sensation of gas in the intestinal tract. The young infant seems to have a lower "threshold" to such pain.

The average adult ignores slight gas pains which to the infant may be very vivid and intense. It is possible that in the process of our mental development we suppress certain visceral sensations which to the newborn are violent.

Just why excess gas is not expelled is problematical. Clinical observation indicates that sphincter relaxation does not follow the peristaltic waves with frequency enough to allow its escape. Peristaltic activity is great and the baby makes expulsive efforts with tremendous abdominal tension, but apparently against a very tight sphincter. This is true even in the absence of any demonstrable abnormality of the sphincter. Colic-like symptoms and

a peculiar form of diarrhea are seen with anal fissures, but this condition is distinct from the clinical entity which we refer to as colic or gastro-enterospasm.

The causes of excess gas in the intestinal tract may be classified as nutritional, mechanical, emotional, environmental, and adaptive, or physiological.

The most important nutritional factor is that the infant be fed enough. The attitude of many leading pediatricians is that colic is merely a manifestation of hunger. However, this is not strictly true since many colicky babies are well fed and gaining rapidly. Also, many times attacks of severe colic will follow immediately or soon after a feeding. Again, refusal of the bottle or breast is one of the cardinal symptoms of colic. A colicky baby is most difficult to persuade to nurse, either bottle or breast.

Hunger causes increased peristaltic activity which may by itself increase tension on intestinal gas, already present, and cause the pain of colic. On the other hand, air swallowing is much greater in a hungry baby who sucks his fists. In the normal adult swallowed air accounts for 70 per cent of the intestinal gas,⁶ and in the infant air swallowing seems to be a much greater factor.

A nutritional factor of equal importance is the amount of undigestible, unabsorbable residue which is left in the feces. Mother's milk has very little of this, while cow's milk leaves a high residue of calcium soaps of fatty acids. Babies fed on mother's milk, especially when underfed, will often show frequent, spotty stools. These are the so-called "hunger stools."² They are only a small green spot on the diaper and do not in any sense represent a true diarrhea. They simply demonstrate the high degree of peristaltic activity in these babies and the low fecal residue of mother's milk. Such babies often are very miserable with colic. If such babies are given some evaporated cow's milk formula, either as complementary or supplementary feeding, the stools become larger, less frequent, and yellow in color. The increased fecal residue seems to have a sedative effect on the baby, and to be conducive to more quit regularity on the part of the bowel.

Over-feeding is regarded by many physicians as a

cause of colic. We do not share that belief, as will be seen from our method of treatment. Filling the stomach, or "over-filling" the stomach, seems to comfort and soothe the baby rather than cause pain. Even in the presence of gas in the stomach a great amount of pain does not seem to be associated with its contractions. This is evident from the actions of babies with pyloric stenosis. These babies lie perfectly quiet while large visible waves pass over the stomach. Now and then violent contractions, which produce projectible vomiting, occur without producing any apparent pain. We do not believe that gastric contractions are particularly painful to infants.

Constipation will precipitate attacks of colic and measures should be taken to prevent the stools from becoming dry and hard. Evacuations should be frequent enough to prevent tremendously large stools from forming. Even though a stool may be of normal consistency it can be so large that violent colic will precede its evacuation. This is unusual and occurs more often in babies several months old. The pain may be so severe that it causes pallor and cold sweating. It may arouse a suspicion of intussusception.

The mechanics of feeding are of great importance in the production or prevention of colic. The baby should be in an upright position during feeding so that the air which is unavoidably swallowed, during the process, will come up easily through the cardia. This air readily becomes trapped when the baby is lying down and then may cause regurgitation of milk or pass into the intestines and produce colic. Frequently during the process of feeding the baby should be stopped and set up to belch. This is done by placing the fingers and thumb in the axillae and allowing the baby to lean forward on the hand, while sitting on the nurse's knee. With the other hand the back is gently patted. This always should be done at the end of the feeding before laying the baby down. If the baby is trained to sleep in the prone position it will be much less likely to regurgitate and it can belch up air more easily than when on the back or side. Of course, a firm mattress must be used.

Of very great importance is the size and shape of the nipples, and the size of the perforations in them. The small-necked bottles and nipples cause much less air swallowing than the large ones. The nipples should not have bulbs at the end. These bulbs are sometimes large enough to gag and choke the

baby. If the openings in the nipples are too large the baby will vomit up the feeding, usually promptly after taking it. This is because so much air is swallowed during the rapid feeding. This is the most common cause of vomiting among infants and often leads to the false impression that the milk is indigestible. These mechanical factors are frequently neglected.

Some babies are "ruminators". They swallow air between feedings, for no apparent reason. These babies are not necessarily crying when they swallow it, and they do not always have severe colic, but they may be very troublesome because of vomiting. Keeping them in a partially upright position may correct the difficulty.

The emotions affect not only the general muscular tone, sphincter tone, and peristaltic movements but also the crying and struggling behavior of infants. During the crying and struggling of great emotional outbursts, babies frequently gulp down air. Many times a tremendous belch follows such a tantrum. The emotions exert their influence in varying degrees on babies, usually reflecting the temperament and stability of the parents. Cooing, overly anxious, supplicant parents usually have the breath-holding and sobbing infants. Such behavior is rare among institutional babies and over-stimulation may account for the higher incidence of colic in babies in the home.³

Some infants hold themselves so rigid and react so tensely to stimulation that they are classed as "hypertonic." They usually are very colicky. Their whole neuromuscular mechanism is overly sensitive. We believe that any baby is potentially a colicky, hypertonic baby unless he is kept comfortable and free from over-stimulation.

Although recognizing the great importance of the emotions in predisposing an infant to colic, we do not believe "spoiling" is a factor in the first two months of life. Babies this young want simply to be comfortable and have their hunger appeased. "Lap colic" is probably a manifestation of how changing the baby's position will allow gas to shift in the various segments of the bowel and give temporary relief. There is a physiological explanation for the relief which seems to come from bodily motion or change of position.⁵

Environmental factors include such stimulation as that of loud noises, the presence of many people about the baby, especially loud-talking, excited people, and temperature variations. A reasonable

amount of household noise should be tolerated by a baby and probably is better than absolute quiet. However, loud, sudden noises and disturbances may bring about a state of over-stimulation.

Attacks of colic may be precipitated by carrying the baby out into the cold. Apparently the drinking in of cold air brings on the pain. We have seen many babies have a very severe attack after their first ride out in the open during winter weather. Chilling the extremities sometimes brings on attacks. Tight abdominal binders increase the pain and frequency of attacks.

In view of the complicated nature of normal gastric and intestinal motility, and in view of the sudden radical transition from intra-uterine life to life dependent on all the functions of the gastro-intestinal tract, it is not surprising that there should be disturbances of intestinal motility in the new-born baby. The segmental and peristaltic contractions of the bowel must accommodate themselves, for the first time, not only to the presence of food, but also to the presence of gas. The transition from fetal to new-born intestinal activity would seem, if anything, more radical than that of fetal to new-born respiratory activity, because of the high nutritional demands of the rapidly growing infant and the frequent necessity of artificial feedings.

After birth the baby also is subjected to all the environmental factors which predispose to colic. The change demands the utmost in adaptive, or physiological, powers on the part of the infant.

Symptoms: An attack of colic is characterized by screaming. Usually the baby will clench its fists, flex its knees, hips, elbows and back and scream as loud as possible. Occasionally we see one extend the lower extremities and arch the back into a position of opisthotonos, while screaming, but this is unusual. If the baby is offered the bottle or the breast it will refuse to suck and continue screaming. This is almost diagnostic, as a baby with any other kind of pain usually will stop crying and nurse. Such attacks may come during the process of feeding and interrupt it.

Attacks of this kind may last for hours. Mothers will say that the baby cries all night and four and five hours at a time during the day. Often they are accused by the physician of exaggerating, but they are not. It is true that these babies will cry for hours and hours unless given relief. They may cry until they cause an umbilical hernia to appear. They may cry so incessantly and nurse so little and

so sporadically that they die from the results of under-nutrition. This is unusual but it may easily happen where the true nature of the condition is not recognized and the formula is changed repeatedly and unwisely.

Often there is a peculiar periodicity to the attacks of colic. Some infants will be free from it except at a certain hour every day. For example, after the 6:00 P. M. feeding there may be intermittent crying for three or four hours, day after day. Many new babies sleep well all night and then have colic all day, or *vice versa*.

The discomfort is not necessarily continuous. The pain may be moderate, but more often it is severe and causes real screaming. A whining, fretful baby is probably suffering from something far more serious than colic. The colicky baby may grunt and strain, making powerful expulsive efforts, but usually this is interrupted by screaming. As he gets older and passes the colicky stage his straining seems more effective and he does less screaming.

Diagnosis: The diagnosis is not difficult. Usually the mother makes it and treats the colic. Where the physician is familiar with the baby and parents he often can give instructions by telephone. It is not necessary to see the baby every time it has an attack. Of course, serious pathological conditions must be ruled out, but usually there have been repeated attacks of colic and fortunately it comes early in life when other diseases are less frequent. Finally the therapeutic test will tell. If the mother cannot give the baby prompt relief with colic treatment, as outlined below, a physical examination is indicated.

Screaming and refusal of the nipple are the cardinal symptoms of colic. Ordinary, fretful crying is not enough. The baby will usually scream as loud as possible. He will let the nipple lie in his mouth without making an attempt to suck, even though it may be dripping with milk. Usually his muscles are taut and his face flushed. The screaming may be preceded by grunting and expulsive efforts, but usually these give way to an apparent "knife-like pain" which doubles the little fellow up.

There are neither fever nor vomiting in a typical attack. Gas and normal stool may be passed, together with a little intestinal mucus, but a stool of any other character should arouse suspicions of something other than colic.

In the differential diagnosis we should consider, first, infections. Most acute infections will be ac-

accompanied by fever. Acute respiratory infections, upper or lower, will be obvious upon thorough examination and should not lead to confusion. The same statement may be made with reference to localized pyogenic infections. Acute enterocolitis will be quickly revealed by the character of the stools.

Congenital syphilis with syphilitic chondritis may cause screaming similar to colic, but the presence of localized tenderness in the extremities will readily reveal the true diagnosis. Pain of this kind does not interfere with feeding.

Surgical conditions, without fever, such as a fractured clavicle or long bone, are equally obvious.

Such surgical conditions as intussusception and volvulus may offer some difficulty. These conditions usually occur in the second trimester of the infant's life, a time when colic is unusual. The passage of current jelly stool and vomiting, together with the shock and prostration of these more serious conditions, will soon lead to a correct diagnosis. As mentioned before, there are sometimes attacks of colic severe enough to cause pallor and transient prostration, with cold sweating. But these cases are rare and the absence of abnormal stool, palpable mass in the abdomen, and vomiting will soon reveal their true nature. Usually the infant makes a rapid recovery from such severe attacks of colic, while the more serious surgical condition will become steadily worse in a few hours.

Acute appendicitis is most unusual, but primary peritonitis might conceivably cause some confusion early in its course. It is very dangerous to assume a baby has colic if there is any fever at all.

Other surgical conditions such as strangulated hernia and intestinal obstruction caused by congenital anomalies, should not be confusing.

Pyloric stenosis, as mentioned above, is not accompanied by behavior characteristic of colic.

Renal colic and pyuria will be revealed by urine examination. Fever will usually accompany the pyuria. Phimosis, or a congenitally small urethral orifice, may cause straining and pain on urination, but this does not offer any real diagnostic difficulty.

Anal fissure is fairly common in young infants, especially where the stools have been loose and frequent from improper feeding. This may cause colic-like symptoms, as mentioned above, but the passage of bright blood will indicate a fissure. Slight dilatation and touching with dilute silver nitrate promptly relieve the symptoms.

Idiots and some feeble-minded infants will cry

continuously for hours. While very young it may be difficult to make a diagnosis of feeble-mindedness, unless there is spasticity, microcephalus or hydrocephalus. However, the correct diagnosis will usually be made before many months pass. Meningitis and encephalitis should not offer any real difficulty.

The diagnosis of colic is one of exclusion.⁴ The characteristic behavior of the infant, the time of life in which colic appears, and the response to treatment make confusion unlikely.

Treatment: Treatment of colic consists of removing the excess intestinal gas and filling the stomach with milk. Predisposing factors, as outlined above, should receive proper attention. This is especially true of the mechanical factors, which are most often neglected.

When the baby stops nursing and begins to scream, or when it refuses to nurse at all, and screams, we lay it on its side and insert a glycerine suppository. This is held in place for ten minutes. While the suppository is in place the baby will usually stop crying, make expulsive efforts and pass gas and stool. It may not stop crying immediately and it may not pass gas immediately. The suppository does not act simply by stimulating an expulsive effort. It relaxes the anus and in so doing initiates peristaltic contractions which may carry gas from high in the intestinal tract. That is why we allow an interval of ten minutes to pass before removing it.

Next we feed the baby. Usually it will suck willingly after gas is expelled, but its feeding may be interrupted again by a pain and it may be necessary to repeat the procedure two or three times before complete relief is given. We always follow the suppository, each time it is used, with feeding. This is done even though it may not be the regular feeding time for the baby. Until colic is relieved it may be necessary to feed the baby somewhat irregularly. We consider this far preferable to allowing the baby to cry two or three hours. These long periods of crying arouse the emotional factors which predispose to more colic, and produce our most difficult cases. Usually our babies are well adapted to their schedule after a few days of such treatment.

We always feed the baby all it wants. We feed it until it lazily makes no further effort to suck and can no longer be kept awake with the nipple in the mouth. Then we "belch" it and lay it in the prone position in its crib. Usually it promptly falls asleep.

It is sometimes difficult to know whether a breast

fed baby is getting all the milk it wants. By weighing before and after feeding the actual amount it gets can be ascertained. But this does not tell us whether or not the appetite is satisfied. The only way of definitely proving this is to pump the breast, very gently, after the baby has stopped nursing. If milk comes freely and easily the baby probably is getting enough. If not, a complementary feeding is probably indicated. It must be remembered that the ordinary breast pump will exert far more force than the baby can exert. That is why we specify very gentle suction.

Some mothers think because milk runs out of their breasts between feedings that they have tremendous quantities of it. But this is not necessarily true. Some mothers breasts seem to secrete constantly, like sweat glands, and yet never contain very much milk at any one time, as can be proved with the breast pump. Breast fed babies are far more often colicky than bottle fed babies because they are far more often under-fed.

The impression may be gained that all our babies are over-fed and over-weight. But this is not in the least true. We feed them, when entirely on the bottle, evaporated milk mixed with an equal volume of 1 per cent lactic acid diluent. This has the same caloric value as mother's milk and, when babies are given all of it they will take, they grow like well-fed breast babies. Our babies usually grow from one to two inches in height a month, and double their birth weight by the fourth month. They are well proportioned, solid babies. Naturally we could not feed them so much if we used a formula rich in carbohydrate and high in caloric content. We add carbohydrate only in cases of constipation.

If the baby is to have complementary feedings, we use equal parts of evaporated milk and sterile water. Babies prefer breast milk to this, and will not take it if they can get breast milk.

The well fed breast baby gets all the breast milk it wants and we see no reason why the bottle baby should not, provided the formula is not too concentrated. The size of the baby and its rate of growth depend on an intrinsic growth factor. Its caloric intake, per kilo, and its rate of growth will be greatest the first four months. After that it will automatically curtail its intake, even though it is given all it wants. We can slow down the rate of

growth, by under-feeding a baby, but we cannot increase it, beyond a certain maximum, regardless of how much milk we give it.

A few babies will show a tendency to abnormal obesity. But these are rare. It is only occasionally that we see one whose intake needs to be curtailed. In such instances, the feeding of vegetables at three months can be used to satisfy the desire for bulk and curtail the calories. Babies rarely show such a tendency before three months.

Obviously there is nothing new in the use of suppositories to relieve colic. This has been done many times. If they have failed, we believe it is because they have not been used persistently enough and followed by feeding. We have never seen harm done with the glycerine infant suppository. The babies we have seen with anal fissures were not the ones in whom suppositories had been used.

Enemas are much less effective and much more meddlesome. Application of external heat to the abdomen, gentle massage and rolling the infant over to change his position, while using the suppository, may help, but usually are unnecessary. We have not used drugs because in our hands they have been ineffective. We never resort to them. We regard relief of colic as purely a mechanical problem.

CONCLUSION

Colic, or gastro-enterospasm, is amenable to successful treatment when efforts are directed toward removal of the cause, which is excess gas in the intestinal tract. Prompt relief of symptoms, and proper attention to predisposing factors, will go far toward preventing recurrences of colic.

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MANAGEMENT OF ACUTE PERFORATED PEPTIC ULCER.*

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Acute perforated peptic ulcers require careful management because of the necessity of prompt diagnosis and the institution of immediate and proper surgery, if dire results are to be prevented. These necessities become very real when one realizes that there is a rapid rise in mortality figures as the lapse of time following perforation increases, until it reaches 50 per cent or more for those patients in which perforation has existed twenty-four hours or longer. The facts and conclusions in this paper are based on a review of one hundred and twenty-eight cases of perforated peptic ulcer that were treated on the Surgical Service of the Jersey City Medical Center from July 1932 to July 1937, a five-year period.

In this series, twenty-two patients died out of the total of one hundred and twenty-eight, or a 17.1 per cent death rate. Nine of these twenty-two had been perforated twelve hours or longer and six for at least twenty-four hours. Five patients died less than twenty-four hours after operation in a state of collapse because of the toxicity resulting from the peritonitis. The average time of perforation in these five instances was twenty-two hours. In retrospect one might come to the conclusion that these patients should not have been subjected to surgery, but all of them, undoubtedly, would have died without it, and several presenting the same picture were saved as a result of operative closure of the perforation. Fleming¹ collected nine hundred and ninety-four cases in 1931 in which there was a mortality of 23.6 per cent. Another group collected by Blackford² at about the same time contained nine hundred and fifty-four cases with a 22 per cent mortality. S. S. Judin³ reports a figure of 14 per cent based on four hundred and twenty-seven cases. Smaller series^{4, 5, 6, 7} in this country report a rate of from 1 per cent to 20.8 per cent. Taking the figures based on the larger series as a more accurate representation of the status of the treatment of perforated peptic ulcers, the internist is challenged to institute more adequate medical care of ulcers as a preventive measure and to make an early diagnosis of perfora-

tion. Moreover, the surgeon must better his operative and post-operative care.

1. TYPES OF PERFORATIONS

| | |
|------------|------------------|
| Duodenal | 79—61.7 per cent |
| Prepyloric | 26—20.3 per cent |
| Gastric | 20—16 per cent |
| Marginal | 3—2 per cent |
| | 128—100 per cent |

2. RACE AND SEX DISTRIBUTION

| | |
|----------------|-----|
| <i>Male:</i> | |
| White | 123 |
| Colored | 3 |
| <i>Female:</i> | |
| White | 2 |
| Colored | 0 |
| Total | 128 |

3. AGE DISTRIBUTION

| <i>All Cases</i> | | | |
|------------------|---------------|---------------|-----------------|
| <i>Age</i> | <i>Number</i> | <i>Deaths</i> | <i>Per cent</i> |
| 10-19 | 2 | 0 | 0 |
| 20-29 | 24 | 1 | 4.1 |
| 30-39 | 31 | 5 | 16.1 |
| 40-49 | 40 | 8 | 20 |
| 50-59 | 19 | 4 | 21 |
| 60-69 | 9 | 3 | 33.3 |
| 70-79 | 3 | 1 | 33.3 |
| | 128 | 22 | |

4. TIME OF PERFORATION

| <i>Time</i> | <i>All Cases</i> | <i>Deaths</i> | <i>Per cent</i> |
|---------------------|------------------|---------------|-----------------|
| Less than six hours | 71 | 10 | 14 |
| 6-12 hours | 42 | 3 | 7 |
| 12-24 hours | 9 | 6 | 66.6 |
| 24 hours plus | 6 | 3 | 50 |
| Total | 128 | 22 | 17.1 |

DIAGNOSIS

Perforated ulcer presents a fairly constant textbook picture, much more so than acute appendicitis for instance, and should, therefore, not be a great diagnostic problem. Even if the picture is obscure, the findings point to an acute abdomen that calls for immediate surgical attention. White males between the ages of twenty and fifty and of the long, gaunt, asthenic type, are prone to have peptic ulcers and, therefore, predominate in all series of perforations. This fact is often of importance in differentiating a perforated ulcer from acute pancreatitis or acute suppurative cholecystitis. The typical case gives a history of the sudden onset of severe epigas-

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tric pain that causes the individual to double up. After the initial sharp pain, he remains fairly quiet because moving about aggravates the pain. An occasional patient, however, will writhe about as in instances of stone colic. Morphia gives little relief. Perforation usually follows a heavy meal or the taking of alcoholic beverages. A careful history will elicit a story of previous epigastric distress which is usually related to meals. Emesis may occur, but this is not a constant finding.

Physical examination shows a rigid, board-like abdomen with a moderate degree of tenderness across its upper portion, more marked in the epigastrium. The tenderness is usually not commensurate with the degree of spasm, probably because the peritonitis is primarily chemical. This fact is often of value in diagnosis. Some cases have acute localized tenderness in the right lower quadrant which is due to gravitation of the spilled stomach contents down the right lumbar "gutter". These cases are sometimes misdiagnosed acute appendicitis. Another sign of value in a positive perforation is the absence of liver dullness on percussion of the right lower antero-lateral region of the thorax. A dilated colon in a heavy, short-waisted individual will sometimes cause obliteration of the dullness but this is not the type of person that usually has an ulcer. We have not found it necessary to depend on roentgenological evidence of free air under the diaphragm to make a diagnosis and so this procedure has not been routinely used, but it should be resorted to when any question as to diagnosis does arise. The white blood count may vary from normal limits to 20,000, depending on the duration of the perforation. It is usually about 12,000. The pulse is slow, of good volume and the blood pressure normal in patients with perforation of no more than ten hours duration. Occasionally a patient seen shortly after perforation will be in mild shock and, of course, the very late perforations are in a very severe state of shock. There is no fever in most cases.

DIFFERENTIAL DIAGNOSIS

Acute appendicitis, acute pancreatitis, coronary thrombosis, suppurative cholecystitis and possibly a very active peptic ulcer or a perforation that has sealed over must be considered most often from the standpoint of differential diagnosis. As mentioned above, the gastric spill often gravitates down the right lumbar "gutter" and sometimes produces acute

signs in the right lower quadrant which, taken alone, point to acute appendicitis. If the short duration of symptoms, however, is taken into consideration, it may be possible to differentiate between the two conditions. On the other hand, some patients with fulminating appendicitis have acute diffuse abdominal signs with short duration and cause diagnostic confusion. Acute pancreatitis occurs more often in the heavy, obese male and shows more evidence of shock and toxicity in the early stages. These patients usually have an ashen appearance, rapid pulse, and low blood pressure. In addition, a trace of sugar is often found in the urine. The signs are localized in the epigastrium, as in perforated ulcer, but sometimes there is also a boring pain straight through to the back. Coronary thrombosis may give some diagnostic trouble but, except for slight upper abdominal rigidity, the abdomen is soft. A careful medical check-up should differentiate between the two. Occasionally acute suppurative cholecystitis may give rise to confusion insofar as the physical signs are concerned but these signs usually are more marked in the right upper quadrant. The habitus of the individual is compact and obese, and gradual onset of symptoms may differentiate it from ulcer perforation. A very active peptic ulcer or a perforation that has sealed over can be ruled out by the absence of rigidity across the lower abdomen.

CHOICE OF PROCEDURES

The first important consideration for proper surgical management of these cases is the choice of an anaesthetic. This is important for two reasons: first, because of the acute condition; and, second, because most of the patients are muscular males and often alcoholics who require an unusual amount of inhalation anaesthesia to produce relaxation. The anaesthetic, therefore, must produce the latter state and at the same time not be one that will shock the patient too much. Cyclopropane supplemented with ether probably answers these demands as well or better than most anaesthetic agents or combination of agents. If necessary, novocain can also be used to give additional relaxation of the abdominal muscles. If a trained anaesthetist is not available, spinal or drop ether is the next choice. Local anaesthesia can be used but some difficulty may be encountered in the case of a duodenal perforation if the patient is uncooperative or if the duodenum is situated posteriorly and is fixed there. Just as in elective gastric

surgery, there are many different ideas as to the type of procedure to be used, particularly with regard to duodenal perforations. Simple closure with or without gastro-enterostomy, pyloroplasty, and subtotal gastric resection are the operations advocated by different surgeons. The gastric ulcer may be simply closed or excised. Some men⁸ also do a jejunostomy in addition to the simple closure. Although approximately one-third of the cases in this series had closure plus gastro-enterostomy, with a much smaller mortality, we advocate simple closure of the perforation. The mortality is greater for simple closure in this series because cases of long duration were not exposed to the additional surgery. In an early case, gastro-enterostomy, when done by a skilled surgeon, does not greatly add to the operative risk but we feel that there are better reasons for not advocating it except in selected cases of old scarred ulcers resulting in complete duodenal obstruction. With an open duodenum, it is generally agreed today that gastro-enterostomy does not meet the problem and, in addition, the development of marginal ulcers in from 5 per cent to 34 per cent of the cases, as reported in different series, must be considered. A gastro-enterostomy is also no guarantee that an ulcer will not bleed or re-perforate at a later date. S. S. Judin has reported that symptoms persist in 50 per cent of the cases at the end of five years, whether simply closed or closed with the addition of a gastro-enterostomy. Lewisohn⁹ reports 39 per cent of persistent symptoms.

5. OPERATIVE PROCEDURES

| Operation | All Cases | Deaths | Per cent |
|---------------------------------|-----------|--------|----------|
| Simple Closure | 83 | 20 | 24.1 |
| Posterior Gastro-enterostomy—36 | 44 | 2 | 4.5 |
| Anterior Gastro-enterostomy—8 | | | |
| Pyloroplasty (Horsley) | 1 | 0 | 0 |
| Total | 128 | 22 | |

6. CAUSES OF DEATH

| Cause | Deaths |
|----------------------------|--------|
| Peritonitis | 12 |
| Re-perforation peritonitis | 2 |
| Pneumonia | 4 |
| Cardiac | 3 |
| Hemorrhage ulcer | 1 |
| Total | 22 |

Primary gastric resection has been done in central Europe for a number of years with apparently excellent results. S. S. Judin,³ in a large series of cases, reports a mortality of 7.8 per cent as contrasted with

a figure of 32.2 per cent for cases treated by more conservative surgery. Analysis of these cases shows that only early perforations in young, robust individuals were exposed to this technique. The conservative figure represents late cases and other poor risks and, therefore, should not be compared to resection results. In addition, the German and Russian races are hardy and of pure stock as compared to the mixed American population and so are better able to stand this major surgery. A number of surgeons¹⁰ advocate primary pyloroplasty, but due to the induration present we do not believe that it is often technically possible. Other men add jejunostomy to the simple closure, so that fluids and nutrition can be given early without interfering with the healing of the perforation. We have not used it because we believe that fluids and nutrition can be supplied by other routes and thus eliminate an additional technical procedure.

In summation, we advocate simple closure of perforations because it is simple but at the same time an adequate surgical procedure that can be done on an acutely ill patient. After using this procedure, practically as many cases are freed of symptoms as when a gastro-enterostomy has also been done. Those patients that do have persistent symptoms can have a subtotal gastric resection done at a later date with much less technical difficulty in the absence of a gastro-enterostomy, or a gastro-enterostomy in selected cases with complete duodenal obstruction. In only two patients in this series, treated by simple closure alone, did such a degree of pyloric obstruction exist immediately afterward that it was necessary to do a short circuiting operation. It was the second perforation in one instance, and a gastro-enterostomy was done thirty days after the closure. The second patient had to be short circuited eleven days after closure. Both made satisfactory recoveries. As we have already stated, pyloroplasty is not often technically feasible, and primary subtotal gastric resection is not universally practiced.

OPERATIVE TECHNIQUE

Our procedure has been to close the perforation transversely with two rows of interrupted Lembert sutures. Tabs of adjacent omentum are used to reinforce the suture line. Chromic No. 1 catgut has been the choice of suture material because it is heavy enough not to cut through indurated tissue. Opinion has varied as to whether these patients should be

drained or not. The peritonitis is primarily chemical and, in addition, the upper gastrointestinal tract is relatively sterile. We do not routinely drain for the above reasons and also because we do not feel that it is possible to drain the general peritoneal cavity in case of diffuse involvement. Four cases in this series were drained, each being of such prolonged duration that an advanced pyogenic peritonitis had developed. We have felt that the peritoneal toilet should be limited to the aspiration of the stomach contents in the immediate operative area. The subcutaneous tissue has been drained in several patients in order to protect the fascial suture line since the fatty tissue so easily becomes infected. We feel, however, that it is safe to close the skin tightly and treat any infection expectantly.

POST-OPERATIVE TREATMENT

Many a beautiful piece of technical surgery has been ruined by poor post-operative care and, therefore, a consideration of surgical management is not complete without a discussion of this subject as well as the actual operative procedure. The question of nutrition, fluids, comfort of the patient, and prevention of complications insofar as possible must be considered. Our routine has been to place the patient in high Fowler's position with pillows under the arms for comfort as soon as the anaesthetic will allow. This is done, first, to promote the dependent collection of any peritoneal infection and, second, to increase the *vis a tergo* of the patient. Morphine is given every four hours for the first thirty-six hours, if needed. Fluids and nutrition are supplied by giving fifteen hundred cc. of 1 $\frac{1}{4}$ per cent glucose in normal saline, subcutaneously, and fifty cc. of 50 per cent dextrose, intravenously, twice a day for the first forty-eight hours. Fluids are given subcutaneously because they are absorbed as needed and also because on a large service this method does not require the watching that the giving of intravenous fluids does. The hypertonic intravenous dextrose supplies nutrition, tones up the circulation and stimulates the kidneys. Blood transfusions are given as indicated. An ounce of water is given every hour beginning the third post-operative day, followed by three ounces of water, tea, or peptonized milk every hour the fourth post-operative day. Gruels, custards, junket, puréed vegetables, potatoes and milk toast, in that order, are gradually added until the patient is on a bland diet on about the

eleventh day after operation. It has been rarely necessary to aspirate the stomach by following this routine. Pulmonary atelectasis and pneumonia may be largely prevented by either having the patient breathe into a paper bag or by giving them CO₂ and O₂ through a mask for a short interval every hour or two during the immediate post-operative period. The other common complications are peritonitis, residual intra-abdominal infections and re-perforations, but little can be done in a preventive way about these.

RESULTS

We do not have adequate follow-up statistics on this series because of the difficulty of keeping track of a large, foreign-born, shifting population. We do, however, have some definite impressions as to their ultimate fate. Approximately 75 per cent of the patients that will follow the prescribed diet and also eliminate tobacco and alcohol, remain symptom free for a year. From this time on up to five years there is a gradual recurrence of symptoms in from 50 per cent to 75 per cent of the patients. There would be fewer recurrences if they could all be kept on an adequate medical régime indefinitely. The cases that have no symptoms at the end of a year slip from under observation and do as they please, with the result that recurrences come in rapid order. Why does not perforation heal an ulcer as has been suggested by some men in the past? In the first place, the perforation usually does not cover the entire ulceration, and, secondly, there is often, in the case of duodenal perforation, a second ulcer on the posterior surface and, even if one healed, the other would remain. In addition, the factors that caused the ulcer in the first place have not been eliminated.

SUMMARY

1. Management of acute perforated peptic ulcer requires early diagnosis and prompt surgery.
2. Simple closure of the ulcer is considered the best procedure.
3. A subtotal gastric resection or a gastro-enterostomy may be done later if symptoms persist.
4. Symptoms persist in approximately 50 per cent of the cases at end of five-year period.
5. One hundred and twenty-eight cases are reviewed with a mortality figure of 17.1 per cent.

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THE HEART IN MYXEDEMA.*

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Myxedema heart was first reported in 1918 by Zondek¹ who called attention to the diffuse cardiac enlargement, sluggish muscular contractions, and electrocardiographic changes consisting of flat P waves, flat or inverted T waves, and low R waves. These conditions tended to return to normal under thyroid therapy. Fahr^{2, 3} reported that seventy-five per cent of all of his cases of myxedema showed some signs and symptoms of heart failure. Venous pressure determinations were not recorded, however. Thyroid extract gave relief while digitalis was of doubtful value. Ohler and Abramson⁴ have presented a study of thirty-five cases of myxedema, thirteen of which showed abnormal changes in the electrocardiogram. According to their findings the chief electrocardiographic changes are a decrease in voltage in all complexes, frequent inversion of the T waves, and occasionally increased auriculo-ventricular conduction time. They also noted frequent enlargement of the heart as revealed by X-ray. Following thyroid extract therapy the electrocardiogram and heart size returned toward normal. Lerman, Clark and Means⁵ found reversible cardiac enlargement and electrocardiographic changes to be common in myxedema but congestive failure rare. They claim that cases showing congestive failure can be explained on the basis of hypertension or arteriosclerosis. Their two reports cover a study of forty-

eight cases of myxedema. Similarly, Blumgart *et al*⁹ found venous pressure values within normal limits in their patients with myxedema. Neither Ohler and Abramson, nor Lerman, Clark and Means found any constant blood pressure changes associated with myxedema. More recently Walker⁶ and Allen⁷ have published brief reports on the subject with X-ray findings before and after thyroid therapy. Both found marked cardiac enlargement with a return to normal heart size following treatment.

Only a few of the numerous reports give definite X-ray findings before and after treatment. One of the following case reports illustrates the value of the teleroentgenogram in the study of myxedema, while the other shows the value of the orthodiagram with determination of frontal plane area. Both of them illustrate the use of thyroid extract controlled by frequent basal metabolism determinations.

CASE REPORTS

Case I. (Hosp. Hist. No. 100285). A forty-seven-year-old-white woman was first admitted to the University of Virginia Hospital on October 28, 1932, complaining of excessive menstruation. Menstrual flow had been excessive and very irregular for about twenty years. About nine years before admission she noticed a swelling in her supraclavicular fossa and a broadening of her face. Later shortness of breath on climbing stairs, and swelling of the feet and ankles occurred, but there was no orthopnea,

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palpitation or cough. The appetite had always been poor and occasionally she had had a burning pain in her stomach, extending through to her back, which followed meals and was relieved by soda. In the few months immediately preceding her admission to the hospital her hair had become noticeably thinner and coarser. She also noticed that she could not stand cold weather as well as she had formerly.

Physical examination revealed an obese white woman in no apparent pain. Mucous membranes were pale, skin dry and rough, hair dry and coarse, and face swollen. Tongue was thick with slow and clumsy speech. Heart rate was slow (sixty-four per minute) with frequent premature beats. No murmurs could be heard but the heart sounds were distant. The heart was enlarged and the blood pressure 160/128. Abdomen was distended without tenderness. Pelvic examination showed increased fat deposit in the labia and cystic erosion of the cervix.

Laboratory Findings: Very slight trace of albumin in urine. Hemoglobin 58 per cent. Red blood cells 3,200,000. White blood cells 7,200. The

differential blood count was normally distributed. Bleeding time was $5\frac{1}{2}$ minutes, clotting time 10 minutes, icterus index 5.3, Wassermann negative, and blood urea 48 mg./100 cc. Mosenthal urinary concentration test was normal. First metabolic rate was minus 25 per cent. Teleroentgenogram and fluoroscopy showed heart to be enlarged both to right and left with a cardiothoracic ratio of 61 per cent. Electrocardiogram showed flat T waves in all leads with slight left axis deviation.

Patient was transferred to the medical service and a diagnosis of myxedema was made. The administration of thyroid extract was begun on November 6. On that day five grains were given, and this was gradually increased until on November 16 fifteen grains were given daily. The administration of thyroid was associated with severe epigastric pain, nausea and vomiting, and loss of appetite for about two weeks but then the patient became much better subjectively and mentally brighter. Because of the gastrointestinal symptoms a gastrointestinal X-ray series, cholecystogram, and gastric analysis were

TABLE I

| DATE | B. M. R. | SYMPTOMS | WT. | B. P. | C/T R. | THYROID |
|----------|----------|--|-----|---------|--------|-------------------------------------|
| 11- 4-32 | -25 | Menorrhagia, weakness, slight shortness of breath, swelling of face, feet and ankles, coarse hair. | 129 | 156/115 | 61% | |
| 11- 9-32 | -18 | Nervousness, sleeplessness, headache, slight nausea. | | 155/105 | | gr. x |
| 11-18-32 | +11 | Nervousness, sleeplessness, headache, severe nausea, vomiting, severe epigastric pain. | 117 | 136/68 | | gr xv |
| 11-28-32 | +8 | Symptom free. | 107 | 110/80 | 45% | gr. iij |
| 12- 4-32 | +14 | Discharged. No symptoms. | 105 | 120/80 | | gr. ij |
| 2-17-33 | -1 | Slight constipation, disturbed sleep, sweating. | 116 | 220/108 | | gr. ij |
| 4-21-33 | +29 | Slight nervousness, headache, hot flushes and sweating. | 120 | 210/110 | | gr. ij |
| 5-12-33 | +6 | Mild headache and slight nervousness. | 116 | 218/104 | | gr. i |
| 12- 6-33 | -4 | None. | 134 | 180/115 | | gr. i |
| 3- 9-34 | +15 | None. | 142 | 200/106 | | gr. i |
| 6-13-34 | -7 | None. | 135 | | | gr. i 5 days week. |
| 11-16-34 | ±0 | None. | 133 | 180/120 | | gr. i |
| 8- 7-35 | +9 | None. | 130 | | | gr. i |
| 10-26-36 | -22 | Slight shortness of breath and cold sweats. | 140 | 188/112 | | gr. i |
| 3-10-37 | -11 | Shortness of breath. | 145 | 198/126 | | gr. i and gr. ij alternate days. |
| 7-14-37 | -15 | Shortness of breath. | 139 | | | gr. i |

done, all of which were essentially normal. Eight days after the beginning of thyroid therapy the basal metabolic rate had increased to plus 10 per cent and fourteen days later a teleroentgenogram showed a normal size heart with a cardiothoracic ratio of 45 per cent. At the same time an electrocardiogram showed upright T waves with a marked increase in voltage of the QRS complexes.

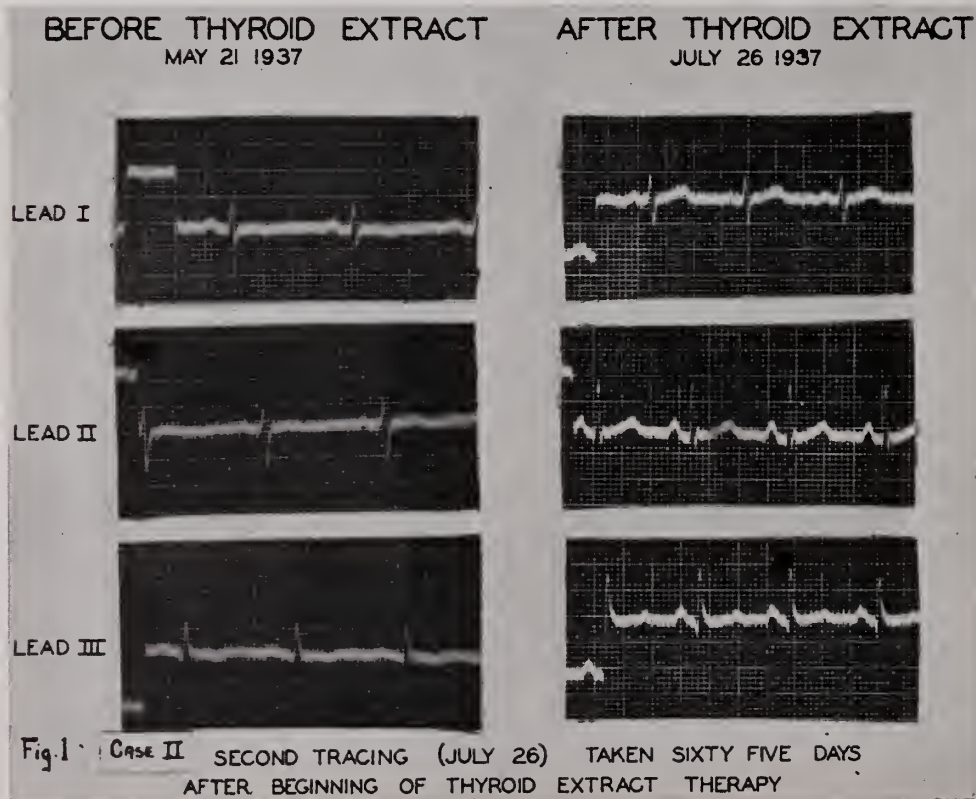
After thirty-eight days in the hospital the patient was discharged. Her general appearance and mental reactions were markedly improved and her weight had decreased from one hundred and twenty-seven to one hundred and five pounds. Numerous basal metabolic rate determinations were made, the last of which was plus 14 per cent. During her stay in the hospital her vaginal bleeding stopped completely.

Since her discharge the patient has been followed regularly through the Out-Patient Clinic. She was sent home on a daily ration of three grains of thyroid extract, which was soon cut down to one grain daily. Since then the dosage has been regulated by frequent metabolism tests and according to the patient's condition (Table I). At one time she was receiving too much thyroid and had symptoms of

mild hyperthyroidism associated with a basal metabolic rate of plus 29 per cent, but she soon became normal when the thyroid extract was reduced. Except for the development of a rather marked hypertension associated with few symptoms she had remained in good health until the present time. She has had no further vaginal bleeding or swelling of her feet and ankles.

Case II. (Ecg. No. 8796). A thirty-eight-year-old white man was sent to the University of Virginia Hospital, May 21, 1937, with the probable diagnosis of hypothyroidism. He was not admitted to the hospital. About three months previously he had had "flu", following which he had remained sleepy. Since then his hands and face had become so swollen that his friend did not recognize him and he had gained twenty pounds. Severe vertigo, failing eyesight, marked dyspnea, and a failing appetite had also become distressing symptoms. The removal of several abscessed teeth had given little relief.

Physical examination showed marked obesity (weight 226 lbs., height 73 in.), puffy face with thick swollen lips, swollen and puffy hands (non-pitting), dry coarse and scaly skin but no falling



hair, distant heart sounds, and a blood pressure of 110/90.

Laboratory Findings: Hemoglobin 85 per cent, red blood cells 4,230,000, white blood cells 8,000, Wassermann negative, basal metabolic rate minus 40 per cent. Electrocardiogram showed low T waves in the first lead and flat T waves in the second (Fig. 1). Orthodiagram showed cardiac enlargement with a cardiothoracic ratio of 58 per cent and a frontal plane area of 143 sq. cm., as compared to a predicted normal frontal plane of 132 sq. cm. for a man of this height and weight¹⁰ (Fig. 2-a).

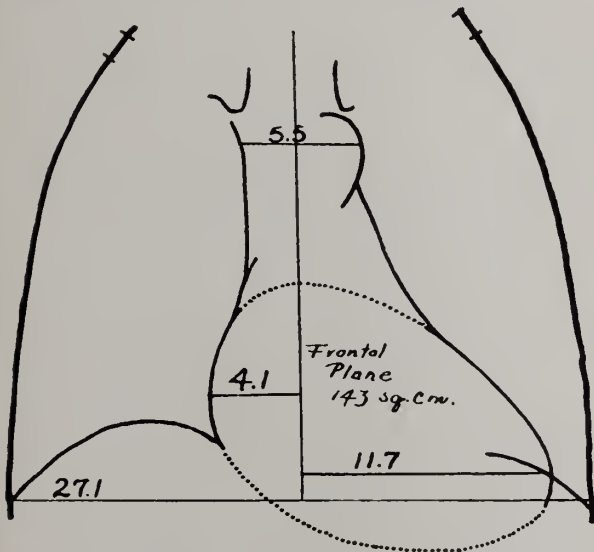
A diagnosis of myxedema was made and the patient was put on three grains of thyroid extract daily

with upright and normal T waves. Two weeks after beginning of thyroid therapy a second orthodiagram was done which showed definite decrease in cardiac size. At this time the cardiothoracic ratio was 49 per cent and the frontal plane area 100 sq. cm. (Fig. 2-b). Since that time his heart has remained essentially the same size. He is now on three grains of thyroid extract daily, is symptom free, and has lost twenty-six pounds in the two months following institution of treatment.

Both of these patients showed most of the classical symptoms and signs of myxedema. Except for dyspnea which was more pronounced in the second

ORTHODIAGRAM

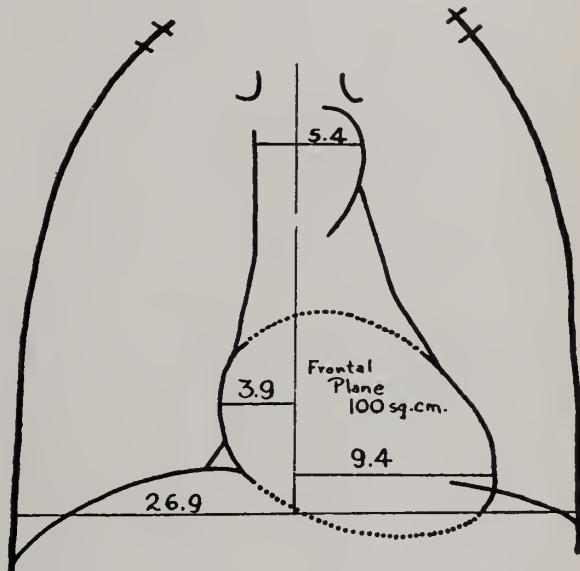
Fig 2-a Case II 5-21-37



which was soon increased to five grains daily. Shortly he showed marked improvement with a decrease in drowsy feeling, loss of weight, loss of scaly skin and brittle nails, decrease in dyspnea, and an increase in appetite. On June 18 a B. M. R. was minus 11 per cent, and on July 26 plus 7 per cent. On the latter date his electrocardiogram was normal

Orthodiagram

Fig 2-b Case II 6-4-37



case, cardiac symptoms were negligible. One must remember that the swelling of the hands and feet seen in both cases can be explained on the basis of myxedema. The X-ray findings are of particular interest in that they show a markedly enlarged heart which in each instance returned to normal shortly after beginning of thyroid administration.

TABLE II

| | | Total Transverse Cardiac Diameter | Cardio-Thoracic Ratio | Area of Cardiac Frontal Plane |
|---------------------|----------------|-----------------------------------|-----------------------|-------------------------------|
| Case I (Teleroent.) | Before Thyroid | 16.7 cm. | 61% | |
| | After Thyroid | 12.1 cm. | 45% | |
| Case II (Orthodia.) | Before Thyroid | 15.8 cm. | 58% | 143 sq. cm. |
| | After Thyroid | 13.3 cm. | 49% | 100 sq. cm. |

From the standpoint of therapy these cases illustrate important points. The first patient was started out on large doses of thyroid extract (as much as fifteen grains daily) and soon suffered from severe gastrointestinal symptoms and epigastric pain which persisted until the dosage was reduced. The second patient never received more than five grains of thyroid extract daily and had a much smoother course without unpleasant symptoms from the therapy. The first of these patients has been followed for five years and demonstrates clearly the necessity of frequent observation. At one time she even presented an elevated metabolism with accompanying symptoms. Careful clinical observation without basal metabolism determinations is probably sufficient to control most myxedema patients. Symptoms have always indicated the approximate thyroid extract requirement in the first case. Means⁸ speaks of a case of myxedema which was well controlled for forty years during which time the metabolic rate was only determined once. He feels that symptomatology is a better guide to management than the metabolic rate. Of course, occasional metabolism determinations are of value, especially when making a diagnosis and when first getting the patient under control.

Myxedema patients under treatment with thyroid extract should be watched for loss of weight, increased appetite, and nervousness on the one hand, and lethargy, increased weight, and swelling of the face, feet and hands on the other. The actual dosage of thyroid extract varies for each patient, and from time to time. The first of these patients has been on about one grain daily most of the time. The second has not been under control long enough to decide what his daily ration will be, but at present is doing well on three grains of thyroid extract daily. Means⁸ feels that most patients will require from one to three grains daily. The optimal dose for each patient must be determined by trial.

SUMMARY AND CONCLUSIONS

Two patients exhibiting the cardiac changes associated with myxedema have been described. Orthodiagraphic study of one of these has proven highly satisfactory for the demonstration of reduction in size of the cardiac silhouette following thyroid extract. Teleroentgenograms recorded a similar sequence in the first case.

The initial dosage of thyroid extract and subsequent daily ration in each case could be determined as easily by appraisal of symptoms as by basal metabolic determination.

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PRESENT DAY PRACTICE OF PAINLESS OBSTETRICS.*

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The accomplishment of painless childbirth as practiced today is the result of a rather voluminous

history which, however, embraces a comparatively short space of years. The first attempt along this line was made by Simpson in 1847, when he employed ether and chloroform. Twenty-nine years

*Read before the Fredericksburg Medical Society, November 11, 1937.

later the use of nitrous oxide and oxygen was introduced. These agents were employed solely for the purpose of alleviating discomfort for a short time at the actual delivery of the child. In 1902 certain German workers, including Gauss, Kroenig, Steinbuchel and others, went a step further in attempting to produce relief during the entire process of parturition. All of us can recall the immense publicity and interest aroused in their *daemmerschlaf* or twilight sleep, which was produced through the agency of morphine and hyoscine. Due, however, to rather uncertain results, with an increase in maternal and fetal mortality, this method as originally employed was soon discarded. It is, nevertheless, to be remembered that a modification of their ideas is widely employed today. In 1923 Gwathmey introduced his magnesium sulphate, morphine, and rectal injections of ether and oil. These injections were quite helpful and are widely used today either alone or in combination with other drugs. Rapidly following these attempts we have seen the introduction of avertin by Eichholtz, dial by McNeil and Vruwink, and sodium amytal by Hamblin and Hamblin. In 1933 I published a series of 744 cases in which all of the above agents were used and my impressions at that time were given in detail. Since that date the literature has been filled with many articles dealing largely with these drugs administered in a wide variety of techniques. At the present time it seems that several different methods are generally employed in various parts of the country, thus allowing the obstetrician to choose and properly select the technique best suited to each particular case.

First and oldest among these is a modification of "twilight sleep" in which the large dosage of morphine has been reduced and a greater reliance has been placed upon hyoscine. This may be supplemented also by the use of the Gwathmey ether and oil injections during the latter stages of labor.

Secondly, a much more wide-spread practice is based upon the use of one or more of the many barbituric acid compounds, combined with hyoscine and possibly the ether and oil injections. The most frequently used compound today is pento-barbital sodium, though many authorities prefer sodium amytal. It must be admitted that this method has certain disadvantages widely publicised in current literature. Clinically, an excellent amnesia is secured, but some of these patients are wildly maniacal and require skilled attendants at all times for

proper care. This restlessness and struggling is fatiguing to the patient and throws, at least theoretically, an added strain upon the entire organism. Also a few of these babies will be delivered in a narcotized condition and will require resuscitation. Experimentally, Gruber of the Jefferson Medical College has shown four sources of danger inherent to the barbiturates when they are employed upon lower animals. They are, first a depression of the respiratory center. Secondly, the cardio-vascular system is affected by a depression of the heart muscle and the peripheral vagus nerve endings. He has also shown that there may be an increase in the rate of conduction over the bundle of His if barbiturates containing sulphur are used. Thirdly, if an intravenous injection of these drugs or evipal is employed there may be a rapid fall of blood pressure, due to cardiac injury and dilatation of the capillaries throughout the body. Particularly in the lungs this change in the vascular bed may result in an oedema or bronchopneumonia. Fourthly, all of the smooth muscles of the body are depressed. In addition to this experimental study, Snyder at the Johns Hopkins Clinic has demonstrated on rabbits that intra-uterine respiration is stopped when barbituric acid compounds are given to the mother. Some writers believe that any method employing large doses of barbituric acid compounds should be restricted to adequately equipped hospitals and given only under the supervision of one specifically trained and conversant with their usage and possible ill effects. In spite of these disadvantages demonstrated in experimental study, the writer has been fortunate in having had a rather extensive experience in this technique and can state that the results obtained have been quite satisfactory. Clinical experience has not justified, in my opinion, the dangers encountered in experimental research.

Recently we have noticed an apparently growing interest in the use of paraldehyd in this field. Kane, Roth, Douglas and others have stressed the value of this drug. Its inherent qualities of disagreeable taste, odor and definite irritative effect have always appeared as obstacles to its administration. It appears to be quite safe and has been used for about fifty years since its introduction by Cervello. Most of its advocates have previously preferred to give it by bowel, but due to the nature of obstetrical cases in which every effort is of an expulsive type, its retention in the lower bowel is only too frequently

impossible. Douglas, at the University of Maryland, employed this drug by giving five drams of paraldehyd mixed with aromatic elixir and while this may be adopted, the taste is still quite unpleasant and it should also be remembered that this drug acts very differently upon different patients. Such a dose may be efficacious for some, inadequate for others, and for still others an excessive amount. In this latter group, over-dosage may result in the patient becoming difficult to restrain. Considering these difficulties, DaCosta and Reis, of the Michael Reese Hospital, have advocated the administration of 1 cc. capsules by mouth at hourly intervals. Two disadvantages are apparent, first, paraldehyd must be placed in the capsules immediately before administration, as it has a hardening effect upon the gelatine and renders it insoluble in water. Secondly, a large number of capsules is necessary due to the volume of the drug employed.

At the present time I have employed this method on a number of cases with certain modifications. My own technique has been to administer a small dose of pento-barbital sodium (gr. iii) at the time of admission to the hospital and, as soon as pains start, the patient is given either 4 or 6 cc's of paraldehyd. This is repeated at hourly intervals and usually morphine (gr. 1/6) is given at the same time with the second or third dose of paraldehyd. The paraldehyd is continued at hourly intervals until delivery is imminent, when it may be effected under any one of the commonly used anesthetics. The frequency of administration is determined entirely by the behavior of the patient, the attempt being made to cause her to sleep quietly between her pains. In no case have I seen any restlessness requiring restraint.

These patients are cooperative and appear fully conscious at the time of their contractions. Amnesia is not secured so frequently by this method, but I believe that a real analgesia is produced. In all of the patients in which this drug has been employed, I have been gratified to find that they have been thoroughly satisfied.

CONCLUSIONS

1. A brief review of the history of analgesia and amnesia is presented.
2. Several currently employed methods are mentioned and the advantages and disadvantages are discussed.
3. A method of giving paraldehyd in capsules in combination with pento-barbital sodium and morphine is outlined which is applicable to home and hospital obstetrics alike, and has the further advantage of appearing safe when employed under these conditions.
4. The author believes that the methods enumerated present in their many modifications a wide choice from which the obstetrician may select a suitable procedure for each patient. It is essential that we realize that no one plan is appropriate for all cases, but each patient should be individually treated according to the judgment of the physician in attendance, the facilities at hand, and the particular circumstances surrounding each patient. It is obvious that only under such management will our relief of pain be most successfully accomplished and the parturient woman and child receive the care to which they are justly entitled.

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TOXIC GOITRE AND ITS EFFECT ON INDUSTRY.*

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Toxic goitre is found in every State in the Union, but one of its most common areas of incidence is the Great Lakes district, which has been called "The Work-Shop of the Nation" because of the location in this territory of many of the country's greatest industries. It is pertinent, therefore, to determine

whether goitre might have an appreciable effect on industry, either from the manufacturer's or employee's standpoint, and to this end it is important to know whether goitre is increasing or decreasing in endemic areas of our country or remaining stationary. If it is decreasing, our problem becomes less important, but if it is increasing more stringent methods of prophylaxis must be instituted.

*Read before the Association of C. and O. Railway Surgeons at White Sulphur Springs, W. Va., during November, 1937.

The use of iodized salt has been considered of value in reducing the incidence of goitre, but after a careful survey made of goitre, at my instigation, in the Toledo School System by Dr. R. M. Burton, it has been demonstrated that, in spite of the universal use of this salt in Toledo, a large number of pupils suffering with goitre of the endemic type have been found, most of whom have had no additional iodine as a prophylactic measure. The incidence is great enough to demonstrate that iodized salt by itself is not sufficient to eradicate endemic goitre.

We must, therefore, conclude that the present incidence of endemic goitre will remain permanent unless individual treatment is administered.

Toxic goitre is present in the ratio of 5.2 per cent women to one man in my patients coming to operation and this ratio assumes importance with the advent of more women yearly into factory and commercial work. In one Toledo factory, The Doehler Die Casting Company, a careful clinical examination demonstrated at least one out of every ten women was suffering from the effects of a toxic goitre as evidenced by the cardinal symptoms, the goitres differing in severity from mild to very severe, and nearly twice that percentage had palpable enlargements of the thyroid gland, without evidence of toxicosis. There are all gradations of thyroid activity, from myxoedema to a plus four hyperthyroidism, and there is no sharp line of demarcation between a normal thyroid and toxic goitre. At times the diagnosis of mild but persistent hyperthyroidism is extremely difficult. Those of a mild over-activity may remain so for years until some disease or strain activates them to a point where they do damage.

Along the sea shore eighty per cent of all toxic goitres are of the hyperplastic or exophthalmic type, acute or fulminating, but in the Great Lakes district a majority of the enlargements of the thyroid are colloidal or adenomatous in character, frequently non-toxic, or moderately so, and of long duration. The individual who has had an enlargement for a long time without symptoms frequently does not blame the goitre for causing his trouble when it appears, and attributes his illness to some other cause such as overwork, family troubles, inherent nervousness, or other disease.

It is the long standing colloidal goitre gradually developing into the adenomatous type that is insidious in character and does damage without the

patient realizing the cause of it. The toxicity is often intermittent in activity, flaring up after an acute cold, or after long and arduous periods of labor, and quieting down after rest or improvement in the infectious process. However, the repetition of the exacerbations almost invariably increases the severity of the attacks, until they become troublesome enough to demand medical treatment or surgery.

Unfortunately goitres do not cause pain, the nearest approach to it being the pressure symptoms or the anginal pains of the heart, due to overwork. Patients appear in a physician's office only when one or more of the cardinal symptoms of goitre drive them to it, or for cosmetic reasons in the non-toxic type. In their daily work the symptoms as they increase in severity affect the earning capacity of the patients and their value to the employer. These workers find it more difficult to do their work and keep up with the competition, and the realization of this by the patient aggravates the trouble and hastens the time when work is no longer possible. Many a patient whose subsequent diagnosis was toxic goitre has come to me with the history of a gradual failing of his or her driving power and work ability, frequently having lost his job or realizing that he is about to lose it, and all of the time not suspecting the cause of his failure, or at least not attributing a major portion of his disability to his goitre. Some of these sufferers keep on trying far beyond their capacities during this period because of their economic burdens, and often they bring themselves by their efforts, almost, if not quite, to the point where they can not be helped. Frequently in their efforts to keep working they wander from doctor to doctor, being treated for nervousness and heart trouble, having their tonsils removed, having their subluxated vertebrae adjusted by chiropractors and osteopaths, embracing Christian Science which, as has been aptly put, is neither Christian nor science, drinking irradiated water, taking special diets, and resorting to various procedures until eventually they succumb to the disease or are fortunate enough to locate a physician who directs their treatment into a rational method.

In considering the reasons why patients who are suffering from goitre finally end up in a physician's office, it is important to remember that those about them, both at home and in their daily work, usually notice a change in them before they are aware of it themselves.

The symptoms that are most important are as follows:

1. *Enlargement of the Thyroid Gland.*—The thyroid is usually at least slightly enlarged in hyperthyroidism, although the gland may be so deeply buried that it is palpated with difficulty. Normal glands weigh from fifteen grams upward, varying with the individual, but the inert colloid in a small gland may be replaced with active cells producing thyroxin, so that it is possible for a small gland to be very active. This may be the type of gland that is causing the most harm, because it is not easily seen and is often overlooked in the search for the cause of the trouble. Patients are, however, beginning to realize that a noticeable gland is not necessary to produce toxicity. The irregular tumefactions are either adenomas or cysts and are objectionable in their appearance, especially to a woman. Those enlargements hinder any individual in his daily work, if they are great enough to become noticeable or can not be covered by clothing. In Switzerland, where five out of seven women have goitres, the appearance of goitres is not objectionable due to their prevalence, but in our country a large nodular goitre is a distinct hindrance to any one applying for a position. If a man is a salesman his customer is so interested in watching the movements of the enlarged thyroid that he is apt not to hear what the man is saying.

2. *Choking Sensation.*—Choking sensation is closely allied with the enlargement of the thyroid gland. When the thyroid is substernal or subclavicular and enlarging, it must press on the trachea, producing the choking sensation. It may cause great narrowing of the tracheal lumen, but the sensation appears to be reflex. A small hard goitre wrapped tightly around the trachea gives the same sensation. Riedel's struma or the thyroid of Hashimoto's disease may become so hard and contracting as to cause a definite tracheal constriction.

3. *Palpitation.*—Palpitation of the heart is apt to appear early in the disease. It may be the first sign of hyperthyroidism, occurring at intervals following hard exertion or becoming noticeable at night while lying down. It persists as one of the cardinal symptoms of goitre. The beating of a normal heart is not seen through the chest wall. If the apex beat is plainly felt when the hand is placed on the chest, the thyroid gland should be investigated.

4. *Tachycardia.*—Tachycardia follows palpita-

tion and is a good indication of the severity of the disease. The thyroid is driving the heart by increasing the demands upon it through increased metabolic activity. Eventually the tachycardia will be so great that the heart musculature will play out, but it will maintain a relatively high rate for months and even years before it wears out enough to demonstrate valvular insufficiency. Auricular fibrillation appears late in the disease and when present is a good indication of the extent to which the heart musculature has been driven. Valvular murmurs are not evidence of thyrotoxicosis.

5. *Fatigue.*—Comparative fatigue tests and individual muscles in normal and goitrous people clearly indicate that the reserve glycogen has been used in those suffering from thyrotoxicosis to the extent that the muscle fails in a much shorter time than that of a normal individual, depending entirely on the grade and duration of the thyrotoxicosis. In neuro-circulatory asthenia the patient is rested by sleep, but in toxic goitre the patient is as tired in the morning as he was when he went to bed. Chronic fatigue is a good diagnostic symptom of goitre.

6. *Nervousness and Irritability.*—Nervousness and irritability are usually the first symptoms of toxic goitre to make their appearance. These symptoms are manifested in many ways—by marked excitability of the patient in the presence of slight accident, by evidence of annoyance over trivial things, and by his or her inability to associate normally with others. Frequently husband and wife who have lived peacefully with each other for many years have their pleasant relationship broken by an interfering goitre in one of them and many divorces have been the result of this. A man with thyrotoxicosis who has been, when normal, a good workman in a factory annoys his associates, takes offense over fancied slights, and believes that his working conditions which previously have been satisfactory are now changed, and he either leaves his good position, or becomes a soap box orator with a vitriolic tongue and makes others believe that they and he are suffering intolerable wrongs. This nervousness, together with the workman's inability to do a normal days labor because he is continually fatigued by the increased metabolism, brings down criticism by his superiors, and a good mechanic is soon out of a job—due to pathology which could have been eradicated by a timely thyroidectomy.

7. *Variation in Weight.*—Variation in weight is the direct result of a change in the metabolic rate. Due to the increased metabolism there is a need for increased fuel to burn and as a result the appetite is over-stimulated and at times the patient puts on weight, in spite of the increased need for food, but as the metabolic rate increases the need finally passes the ingestion of food and there then follows a marked loss of weight. If the appetite fails, as it may, the loss of weight is very rapid, associated with a marked loss of strength, making it difficult for the patient to do his normal work.

8. *Eye Changes.*—Eye changes develop with increased toxicity. In hyperplastic goitre there appears an exophthalmos in approximately 50 per cent of the cases. The exophthalmos is disfiguring, but more important is the fact that there may ensue a stretching of the optic nerve with some injury which causes a lessening of acuteness of vision. Usually after a thyroidectomy there is some recession of the eyeballs with an associated improvement of vision, but at times the exophthalmos is progressive and may cause total blindness if allowed to continue without relieving the pressure behind the eyeballs. Naffziger's operation is now saving the vision of some of these sufferers. In addition, without the disfiguring exophthalmos, there is usually some change in the vision in cases of toxicity of long duration or marked severity and after the thyroidectomy the vision improves for some period of time. The glasses that the patient has worn before the operation are unsuitable after operation, necessitating a change in them. It is not advisable to have them refitted, however, for a period of six months after thyroidectomy because improvement is gradual and progressive for at least that duration, but after six months an optic *status quo* has been established.

9. *Gastro-Intestinal Symptoms.* — Hyperacidity and chronic indigestion are common in cases of well advanced toxic goitre. Patients have had their gall bladders removed without improvement, when in reality the trouble was due to the thyrotoxicosis. The overloading of the stomach due to the increased appetite of these people aggravates the gastric instability.

All of these symptoms may not appear in the origin of the disease, but will probably follow in irregular order and severity. They are constitu-

tional symptoms affecting the individual's ability to work, but giving ample warning, not as acute appendicitis or pneumonia in which an individual is perfectly well one day and totally disabled the next, but hanging out the red flag of danger for months or years—warning the sufferer to care for himself. In individual instances I have known of a goitre patient losing control of himself and allowing a valve to open, spraying hot metal over other workmen and himself. Another individual, too fatigued by the ravages of his thyrotoxicosis to attend to a valuable boiler, allowed it to be burned out. Still another toxic individual originated an argument which brought on a melee in a factory and stopped two days production. Such instances, if carefully looked for, can be found frequently, but it is only after examinations that they are connected with goitre. In many factories only a casual examination, if any, is made of the thyroid gland at the time of employment. Herniae, which are made much of, may not be doing as much harm but may eliminate the man from employment, whereas the moderately enlarged thyroid gland causing tachycardia and frequently increased blood pressure are overlooked, but their damaging effect on the individual and the factory may be as great as that caused by any other disease, for the thyrotoxic individual is kept working while in an unrecognized but none the less dangerous condition.

This paper is written because of my desire to bring to the attention of the profession, particularly those physicians engaged in the examination of applicants for positions in industry, the advisability of carefully examining the applicant for evidence of symptoms of thyrotoxicosis, in order that both the employer and workmen may be protected from damage resulting from goitre. Brought to a realization of the endemic character of the disease by many surveys that have been made, it behooves physicians engaged in industrial work to examine workmen for thyrotoxicosis as carefully as they are examined for any other physical defects. In the incipency of goitre much can be done by medication to abort it and, when found, advice as to treatment should be given. Also, thyroidectomy should be advised in active cases with the idea of conservation of valuable workmen and protection to the industry.

320 Michigan Street.

THE PRACTITIONER'S ATTITUDE TOWARDS STATE MEDICINE.

FRED M. HORSLEY, M.D.,
Arrington, Virginia.

In the statement of the American Medical Association that "The health of the people is a direct concern of the government," all fair-minded people must agree; for efficiency and activity of citizens supply the vigor and needs of a nation.

That nearly fifty million Americans receive no professional care whatsoever and many other millions only inadequate treatment is a staggering thought. The average citizen spends a week each year in bed, and about one in five has chronic illness which needs attention. The disease of T. B. is seven times more fatal among the poor, and the death rate of the underprivileged is about twice as much as among the larger income class.

Of the one million persons who die in the United States every year, one-third could be saved by proper medical care; so these are facts we must face.

Physicians as a class have not failed in unselfish service, nor in their devotion to duty, but the medical profession as a whole has not met the wants, nor supplied the needs of many suffering from disease. As much as the profession has done by splendid accomplishments and sacrifice for humanity, it has not supplied this great deficiency and doubtless can not unaided.

The fears possessed by the A.M.A. of extinction of the private doctor by government interference are real, for there would be removal of the responsibility of the doctor to his patient, and the stimulus of faith placed in the physician by his patient. The helpful effect of the physician's special interest in an individual case are things truly to be considered, and these losses should be avoided if possible. Where many cases are treated in clinics and hospitals these assets are already lost to a great degree.

Where possible the relationship of the physician to his patient should be retained, or else the fine art in medicine, founded on confidence, is lost through lack of contact with individuals and the loss in flow of psychic influence that springs from human interest. After all, it is the trained physician who is best fitted to pass on such questions concerning medicine, so I believe a national program of health should be formed, as stated by a group of doctors who disagree with the A.M.A.'s stand. They state that:

"1. Increased financial support for private and government hospitals, which care for the medically needy, should be furnished and supplied by voluntary contributions, from local, state and federal tax funds.

"2. Increased support of medical research, education and study to be supplied from the same sources.

"3. Extension of government supported public health service to include more persons, more diseases.

"4. Placing of the direction of such a program in the hands of competent medical experts. In particular, the health activities of the government are already important enough to justify the creation of a Cabinet post for a Secretary of Health."

However, many local needs are not rightly met where the controlling and directing force comes from a centralized source. Therefore all authority should not be vested alone in the Federal government to undertake such work, but there should be local representation as well as state and federal, and authority of direction and control should be distributed to these three heads, or the local problems will not be justly and rightly met.

The financial need in supplying medical services to patients who can not afford the expense of treatment and care, is doubtless the greatest question to be solved in a variety of ways according to the location and special conditions.

There exists a condition in country practice that has not been fully realized. In many districts, owing to better roads and easy access to hospitals, clinics, and city doctors by modern automobile transportation, many cases that can pay go to these voluntarily, and leave those who are unable to pay for the local doctor to attend; so if this condition continues the country physician will in the future pass out.

The expense to the average man of automobile transportation, and the drain by credit houses, has robbed the country districts of cash, so there is little left for medical expenses.

Since 1932 many patients have been carried on the physicians' books. As living conditions are be-

coming better, these same patients are faced by many other past due obligations, so most of these credit cases can not settle their accounts. From these and other observations it looks like we are facing the question, "Will there be any more country doctors in the future?"

There are many problems of the above nature to be solved for various sections, so it is imperative that local representation be given due authority to

solve and administer any just plan for all concerned.

As members of the medical profession let us awake to the fact that by our training and inherited high ideals of public service, we should take a leading part in the change that the public is justly demanding in management of medical service. If, as leaders, we do not fulfill this function, both the public and the profession will suffer for blunders made by those who can not understand our viewpoint.

A DOCTOR LOOKS AT NURSING.*

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If I direct my remarks entirely to the members of the graduating class, I may perhaps be pardoned. It is, after all, your occasion, an important episode in the life of each of you. In one sense it is not, of course, as important an episode as that earlier occasion when you made the choice of your life work by entering the school of nursing. In another sense it is of greater importance, for now the justification of your choice lies immediately ahead.

When a young person picks his or her life occupation, many intellectual and emotional factors, the growth of heredity and environment, work together. The motives of first importance may range from economic needs to intense humanitarian impulses, modified by all varieties of proven or imagined aptitudes. The one thing, unfortunately, that is missing in this choice in most instances is a real knowledge of the life that is undertaken. The activities and point of view of a profession are known by one not yet a member of that profession, only by hearsay and by appearances. The essential quality of a professional person develops through experience in the profession, and in that way alone. Today, you have more than an inkling of the meaning of your chosen work, and each year of added experience will increase your understanding of its significance.

Each of you has, or should have by this time, related yourself to the conditions of your individual life as a member of the human community. By that I mean that those of you who possess neither a private yacht nor a polo field have sensibly adjusted

your desires to that fact. Those of you with intellectual aspirations have adapted your intellectual activities to the range of your capacities. Each of you has shaped your emotional life to the spiritual demands of your particular environment, preserving your emotional integrity and yet discovering a fund of sympathy and interest in others that lends color and significance to your daily life. If any of you has not already made such adjustments, I can only express sorrow for you.

On the other hand, it is probable that none of you has yet succeeded in relating herself to life as a professional person in a wider sphere. Through certain comments on the significance and aims of nursing, mostly quite obvious, it is my purpose to present to you a thought or so that may help you to clarify your relation to the future. I shall try not to follow the easy path of moralizing. As I have already hinted, I cannot give you a perspective on your profession from the inside. Up until today that has come to you from what your teachers have imparted of wisdom accumulated through years of experience. In the future it will grow from your own living of the professional life. My contribution must be that of an outsider, yet of one not too far outside; one who has been working with your profession for nearly twenty-five years, who has been deeply indebted to it in countless ways, but who has, nevertheless, been sufficiently separated from its emotional background to permit a somewhat unprejudiced weighing of both its virtues and its faults.

Although the care of the sick must date farther back than the earliest records of mankind, yet the

*Address presented at the graduation exercises of the Blue Ridge Sanatorium Training School for Nurses, Charlottesville, Va., May 4, 1937.

organized profession of nursing as we know it today is perhaps the youngest of the professions. It has not yet had time to make its own needed adjustments as such. To one who has worked shoulder to shoulder with nurses, certain conflicts between ideals and practical possibilities are obvious. As you take your places in the profession, it is important that you know that such conflicts are believed to exist by more than one observer of nursing activity. If, on the basis of your own experience, you come to the conclusion that the presence of these conflicts is only apparent, it is of course your privilege to do nothing about them. If, however, you should feel that there is some truth in what I am about to say, then you, as members of an honored profession, must play your parts in the adjustments that become necessary.

The first of these conflicts presents a somewhat fundamental contradiction. The earliest nursing, and the only nursing until recent decades, was voluntary nursing. Those whose lives were devoted to the care of the sick undertook the task through motives arising from the heart and not from the head. Their lives were lives of complete sacrifice of everything else in human existence. In most instances, they undertook the task because, to them, the necessity of expending themselves for others far outweighed other rewards of living. The noble tradition of service for others remains written upon the banner of the modern nursing profession. Yet today the conditions under which the tradition arose no longer exist. With the development of nursing as a profession, there has necessarily crept into the picture the conception of it as the source of a livelihood not different in quality from that expected by the members of other professions. It is true that the older nursing organizations furnished the essentials of existence. Today the nurse, quite understandably, looks for more—for books, for travel, for silk and fine linen, for theatres, in short, for all the pleasant things in modern civilized life that make up the existence of the cultivated woman. In order to obtain these undeniably good things, the nursing profession has had to protect its members by certain rules of employment and stipend to which all desiring the services of the nurse must yield. The motive behind the establishment of these standards is equally as just as that which has inspired attempts to protect the working man from exploitation.

In accepting, or perhaps better in demanding,

recognition as a profession, nursing has necessarily had to accept these new economic elements. It is quite obvious that they conflict sharply with the professed ideal of undiluted service for others. Less sympathetic critics than I have described the modern nurse as holding aloft with her right-hand the banner of complete self-abnegation while waving with her left a copy of not unselfish rules. This picture is, of course, exaggerated. To any member of my profession who has had the experience of witnessing real self-sacrifice among nurses, the picture is not only exaggerated, but intolerable, a cartoon in a taste rendered bad by the fact that only a half-truth is presented. After all, true charity nursing is economically impossible in modern life, except for short periods; and my profound admiration goes to those nurses whom I have known to care for the indigent through long and difficult nights and days at the expense of possible employment under the normal conditions of financial reward. I take no credit to the medical profession for its charity work, for, after all, the case that can pay is traditionally expected to make up the doctor's total income to a living point, no matter how much time may be spent upon the poor. The nurse has no such compensation for time devoted to the penniless.

It is not for me to suggest how this apparent conflict can be reconciled. Let me urge you only to look at it realistically, to recognize the fact that modern economic complexities and the desire of the nurse for professional standing have together introduced elements into the philosophy of the profession which do not always sit well in the lap of the older tradition. Such a realistic conception will prevent the tendency for you of the nursing profession to over-sentimentalize what is, after all, simply the day's work.

The second major conflict in modern nursing is one of which you are no doubt well aware, namely, the conflict between the practical demands of nursing and the demands of general cultural education and medical education, in short, the great battle of the nursing curriculum. This battle has not recently been joined. It has been raging during my entire contact with your profession. It is related to the greater struggles that embroil the entire field of the teaching of the young. Its intensity within the field of nursing is, perhaps, another expression of the youth of the profession. I would not presume

to attempt to settle this controversy in these few brief moments, nor, in fact, had I a lifetime to spend upon it; I would only call your attention to the fact that the problem exists and that it must be met.

You are familiar with the attempts of certain leaders of your profession to combine in increasing degree general cultural education with nursing training. Others, as well as the majority of the medical profession, have felt that perhaps too much emphasis has been placed on the cultural elements in this combination, a point of view based on the opinion that the average bedside nurse should have her technical training placed first in the curriculum and that this tendency towards college courses bids fair to upset a fundamental balance. Should this tendency continue to grow, it is clear that the balance might be so greatly upset as to permit the development of no nurses who will be content with bed-side nursing alone. It is, after all, a question of limiting one's mouthful to what can be chewed and, even more importantly, to what can be digested. In this connection, it might be interesting to point out that, unfortunate as it may be, the medical profession has had to adjust its own dietary. One hundred years ago the doctor was the learned man of his community, being expected to embrace a major proportion of the sum of human knowledge. As the complexities of his professional field have enormously multiplied, he has perforce ceased to take his old interest in cultural development. I am sorry to confess it, but with the exception of rare individuals and those mostly among the older men, the medical profession has ceased to be a learned profession in the real acceptance of the term. Whether or not this has any bearing on the controversy now under discussion is doubtful, but at least it will serve to illustrate the limitations of the intellectual capacity of ordinary mankind.

In developing these remarks, I would not like to be misunderstood to the effect that no cultural education is necessary or desirable for the nurse. We must recognize that any individual's cultural life is a dynamic thing, not a thing that is ever finished. The old story of the college graduate who accepts his sheepskin with the remark: "Now I am educated", illustrates the point. True cultural development begins in childhood and continues through old age, its growth and progress depending more on the aptitudes

of the individual than upon the formal education he receives. Those of you who have an interest in the things of the mind will perforce cultivate them. A certain exposure to stimulation and to methods of study is of the greatest importance in the initiation of this process. All I would do is to point out the tendency, which seems to be growing, to sacrifice the technical phases of nursing training to this other desirable phase of education. I would not say that it has gone too far today, but I would point out that further steps in this direction might be harmful.

So far, I have considered this problem only from the point of view of the nurse whose life will be spent in actual nursing. For her whose interests and capacities foreshadow her leadership in the profession, further general educational opportunity is unquestionably necessary. Such schools as the school of nursing education at the University of Virginia seem the ideal answer to that need. We cannot crowd too much into a short period of time. The distinction between the bachelor's degree and the doctorate, as expressed in the field of general education, is a distinction well worth remembering. She who would be an outstanding member of the nursing community—and thereby of the community at large—is urged to carry her education on beyond her years of hospital training.

When one essays to speak of the amount of teaching a nurse should have in medicine, the causes, the diagnosis, the treatment of disease, one encounters again a problem that requires a greater wisdom than mine to resolve. The danger of a little knowledge is more sharply focussed in medical matters, where life may be the price, than in other fields of human interest. The nurse cannot more than brush the surface of medical knowledge and yet, in certain phases of nursing responsibility such, for instance, as the field of public health nursing in isolated districts, her knowledge should be more than superficial. The question can be squarely put: "What place should purely medical subjects have in the nursing curriculum?" In spite of the occasional need for real medical insight, it has seemed to many that the present-day tendency is toward too much emphasis on the things that a doctor must know. It is well for you to be aware of the fact that, in the experience of any medical man, nurse diagnosis and nurse treatment, though uncommon, are occasionally encountered and that they are usually detrimental

to the patient. One cannot criticize the motives of the nurse who assumes to give advice in disease, but one can criticize her judgment. Let me urge upon you from my outside point of view this principle of nursing ethics that you have so thoroughly been taught. It is to be remembered that in satisfying a friend who asks your medical advice you are doing her no favor, provided a doctor is available. This admonition is unnecessary and would not be given were it not for a single fact. The nurse's relationship to medicine is so close that the outside world looks upon her as possessed of a special knowledge which often she knows she has not. It is hard to refuse the halo, whether or not it be deserved.

The third conflict I would mention is one closely entwined with the whole growth of nursing into its present professional status. Professions in general are peculiar in that they, because of their special knowledge are permitted by the public to control their own techniques, their own ethics, and their own public relationships. They are, as professional bodies, independent of any control except that exercised by the State. Nursing, by its very nature, on the contrary, must be subordinate to the development and the demands of medicine, which it serves as handmaiden. It is difficult for any, except the somewhat prejudiced exponent of what has been called "the woman movement", to deny this relationship. It is somewhat of a contradiction for you to be taught that, in the care of the individual patient, you are to obey the doctor's orders as a private obeys his officer and yet that, as an organized body, you should control your destiny quite independent of the desires or necessities of the medical profession. From the doctor's point of view, there exists now a somewhat unfortunate tendency of those in control of nursing education and of nursing bodies to follow a path quite unguided by medical needs, in the natural desire to enhance the prestige of nursing and improve its personnel. The objection of the doctor to this independence of the nursing profession does not imply a desire to impose his own direct control. After all, no matter how great the male instinct to exert power over one or two samples of the opposite sex, an obligation to control women in numbers is always somewhat frightening. The objection is based on a realization of the fact that the care of the sick is ultimately his sole responsibility and that, in the

care of the sick, the nurse can have only delegated authority. He does not seek control of the nursing profession, but he does seek a proper consideration of his point of view, and of his estimate of the qualifications that a nurse must have. Let me add here that this criticism is one addressed only to the nursing profession as a body. In the daily contacts of nurse and doctor, nurses are remarkable in the tact with which they yield to the doctor's authority. This attitude is a difficult task in direct proportion to the authority of the nurse over her fellow nurses and is most difficult for those in high executive positions. Any failure to observe it is so infrequent that it stands out in one's memory as an exception.

I have presented quite frankly what, in the minds of more than one doctor, are important points in which nursing seems not to have adjusted itself to its problems. All professions are stumbling about among the changing conditions and the developing philosophies of modern days. In that it has no ancient tradition as a profession, nursing may find adjustment difficult. Insofar as it is, itself, an expression of modernity, it may find adjustment easy. You will live through changes and I hope will play a part in effecting them. Certainly you should try to understand the problems your profession faces, not only through such outside perspective as the present discussion presents, but also through knowledge of what the leaders of your profession are thinking. The present point of view of your leaders is not necessarily the ultimate decision of the profession. Your judgment of it should be tintured by what the medical profession thinks—and by that I do not mean what I, as an individual sample of that group, have here said—by what the public thinks and wants and, finally, by what kindness and charity dictate.

These considerations are of ultimate importance to you. At the moment, however, the question probably facing each of you relates to your immediate future. Into which of the three general types of nursing are you going to launch yourself, bedside nursing, public health nursing, or teaching and executive nursing? My advice can be of little value to you, as each individual must face and make her own decision. Let me offer just one comment in this connection. She who would nurse at the bedside must be consumed with the holy fire of service; she must burn to care for the sick with the flames in which were born the

ancient orders of devoted women. Only a person so motivated can successfully cope with the triad of conflicting interests, the fretful and apprehensive patient, the alarmed family that settles in the nurse's hair, and the often apparently unreasonable and demanding figure of the doctor. We expect the nurse to reconcile these three irreconcilables and to leave each element with a sense of the right thing done, the kind word said, the thorny path smoothed. We expect her to succeed no matter how weary or ill she by chance may be. If she fails, it is a matter of sternest comment. Not often enough do we bow in acknowledgment of an almost impossible task in human relationships, tactfully approached, serenely handled, and successfully concluded. Few men could do it.

And this brings me to a concluding thought. I promised not to moralize, and yet I crave leave to break my promise as I close. One of my teachers, a distinguished surgeon said "After all we have nurses because they are women". It is a maxim of modern psychology that every trait, whether germane to the sex of the individual or not, is present in each of us. The final personality pattern results from the emphasis placed on the individual characteristics, whether they be male or female. A man can be effeminate and a woman can be mannish. It has often been observed that women in positions of responsibility, nurses as well as lay women, tend to overemphasize certain male traits, an overemphasis that leads to the development of a mannish personality. In other women, under these circumstances, one may see the development of the pettier female characteristics, leading to a womanish pattern as contrasted with the well-rounded feminine nature called womanly. In making this generalization I would not absolve individuals of my own sex from the impeachment of improper reaction to the endowment of authority. It behooves each one of either sex, as responsibility grows through life, to attempt by the strictest self-appraisal an estimate of the direction in which the personality may be traveling. Most of the problems that confront the nursing profession, or the individual nurse, will fade away if honest thought be brought to bear upon them, colored by the emotional background of essential womanliness. Good luck to you all.

Public Health Statistics

I. C. RIGGIN, M. D.,

State Health Commissioner of Virginia.

The report of the State Health Department's bureau of communicable diseases, as compiled for the month of June, shows the following cases compared with the same month in 1937.

| | 1938 | 1937 |
|--------------------------------|-------|------|
| Typhoid and Paratyphoid..... | 31 | 39 |
| Diphtheria | 19 | 32 |
| Scarlet Fever | 69 | 25 |
| Measles | 1,228 | 798 |
| Meningitis | 6 | 25 |
| Poliomyelitis | 3 | 8 |
| Rocky Mountain Spotted Fever.. | 7 | 8 |
| Typhus Fever | 0 | 0 |

SCHOOL HEALTH AND THE PHYSICIAN

The role, which the practicing physicians in Virginia have played in the reduction of the number of cases and deaths from diphtheria and the almost complete eradication of smallpox, need not be emphasized. Their cooperation with state and local health authorities has made possible the progress thus far attained in the control of these diseases. With the approaching school term the service which the physicians may render in protecting the children against diphtheria and smallpox is again brought to mind.

It is not to be inferred, however, that vaccination against smallpox and prophylactic inoculation against diphtheria should be delayed until school age, but rather that those who have failed for one reason or another to receive this protection should have it before entering school where the possible exposure to these diseases will be increased.

The Virginia Department of Health recommends a protective dose of diphtheria toxoid between six and nine months of age. It is also thought advisable to administer the Schick test to children just prior to entering school in order to recheck the immunity status at this age. As is well known, vaccination against smallpox is advisable at the end of the first year of age.

NEW INDUSTRIAL HYGIENE BULLETIN

The State Department of Health is circulating a new bulletin entitled "Evaluation of the Industrial Hygiene Problems of Virginia". This one hundred and twenty-five page publication is based upon a

survey of types of industries in this Commonwealth which have been known to cause, or which were felt might cause, occupational diseases. Seven hundred and forty-six industrial plants with a population of 87,640 were involved in the study. The narrative is interspersed with interpretative tables and charts.

This booklet already has attracted attention not only in Virginia but in other jurisdictions also. It is of especial interest to industrial physicians, plant executives and to other professionals interested in the industrial hygiene problem.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. JAMES B. STONE, 15 Maxwell Road, Richmond.

President-Elect—MRS. HAWES CAMPBELL, Venter.

Corresponding Secretary—MRS. LAWRENCE O. SNEAD, 5307 New Kent Road, Richmond.

Recording Secretary—MRS. JAMES K. HALL, 3011 Seminary Avenue, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, 2502 Hawthorne Avenue, Richmond.

Chairman of Publicity—MRS. FRED J. WAMPLER, 4103 Forest Hill Avenue, Richmond.

The San Francisco Meeting.

Your reporter desires to preface her account of this meeting by stating that it has been her privilege and pleasure to attend and report upon many previous conventions, but in this instance there was so much seen and so much done, a detailed account of which would be impossible due to our limited space in the MONTHLY. Therefore, with apologies, this report must necessarily be abbreviated to cover only the most outstanding events.

The Sixteenth Annual Meeting of the Woman's Auxiliary to the American Medical Association was held in San Francisco, California, June 13 through 16, 1938.

Monday morning, June 13, was given over entirely to the meetings of the National Board which were followed by an informal luncheon for the Board members. That afternoon two sightseeing trips were given by the Hostess Auxiliary for the entertainment of the visitors. One was a trip over the San Francisco-Oakland Bay Bridge to the University of California with tea served at the International House

by members of the Alameda County Auxiliary, and the other, a tour of the city, through the Golden Gate Park, and winding up with a drive along the shores of the beautiful Pacific Ocean. That evening the visitors were entertained at a Chinese dinner, followed by a trip through that most interesting section of San Francisco known as Chinatown, with stops at many shops and bazaars, and a visit to a Joss House where the religious rites and ceremonies were explained by a Chinese guide.

On Tuesday, June 14, a Southern Breakfast honoring Mrs. Augustus S. Kech, National President, was held in the Terrace Room of Hotel Fairmont. Following this breakfast the Convention was formally opened by Mrs. Kech. The invocation was given by the Rev. Geo. H. B. Wright, Canon of Grace Cathedral. Mrs. J. C. Geiger, General Chairman of Arrangements, was introduced, and the address of welcome was made by Mrs. Clifford H. Wright of California. Following a most impressive "In Memorium" service, reports were read by the Chairmen of Standing Committees. At 12:30 the meeting adjourned to enable those in attendance to embark upon an excursion by boat on San Francisco Bay, and to enjoy a delicious buffet luncheon at Treasure Island, the site of next year's World's Fair. At 8 o'clock in the evening the members and guests were privileged to attend the opening Session of the American Medical Association at the Memorial Opera House.

On Wednesday, June 15, the General Auxiliary Session convened at 9 A.M. in the Gold Room of Fairmont Hotel, with Mrs. Kech presiding. On this day the State Presidents gave their annual reports, recounting the many and varied activities and accomplishments of the thirty-nine organized State Auxiliaries throughout the United States. At the conclusion of these reports, the slate of officers, which was brought in by the Nominating Committee, was unanimously accepted, and the following officers for the coming year were inducted in an impressive ceremony: President, Mrs. C. C. Tomlinson, Omaha, Neb.; President-Elect, Mrs. Rollo K. Packard, Chicago, Ill.; Vice-Presidents, Mrs. Frank N. Haggard, San Antonio, Tex.; Mrs. David W. Thomas, Lochaven, Pa.; Mrs. L. S. Merrill, Ogden, Utah; and Mrs. J. R. Westaby, Madison, South Dakota; Treasurer, Mrs. E. E. Fisher, Portland, Ore.; and Recording Secretary, Mrs. J. C. Downing of Iowa.

The Annual Auxiliary Luncheon, which is always an outstanding feature, followed immediately. Mrs. Kech, presiding, introduced the many distinguished guests at the Speaker's Table, among whom were Dr. Irvin Abell, President of the American Medical Association, Dr. J. H. J. Upham, the retiring President, and Dr. Walter Donaldson of Pennsylvania, all of whom brought messages of encouragement to Auxiliary workers, and expressed their gratification at the progress which is being made by the women in their services to mankind. Dr. Abell particularly commended the Auxiliaries for their preservation of local medical histories and their contributions to philanthropic enterprises. He advocated and urged each organized group to familiarize itself on the subject of Socialized Medicine in order that all Auxiliary members might be well-informed on what such a movement by the Government would mean to physicians and to the lay public.

Conferences and round table discussions were the order of that afternoon, and in the evening the hostess Auxiliary entertained with open house at the San Francisco Medical Society Building.

On Thursday morning, June 16, the Post Convention Board Meetings were held. In the afternoon the visitors had the choice of several sightseeing trips, this delegate choosing the trip to the Muir Woods, one of California's famous Redwood Groves. In the evening a Bring-Your-Husband Dinner preceded the President's Reception and Grand Ball, which brought to an end four days crowded with business and pleasure.

This report would be incomplete without some special reference to the instructive and cleverly ingenious exhibits on display, all of which seemed especially effective this year.

The thousand and six Auxiliary members and guests, whose privilege it was to attend this meeting, will long remember the Convention in San Francisco—the City of the Golden Gate—as one of the most outstanding in the history of the Auxiliary to the American Medical Association.

JANET WATKINS STONE.
(MRS. JAMES B. STONE)

The James City County-Williamsburg Auxiliary

Met recently at the home of Mrs. J. R. Tucker, Williamsburg. Seven members were present, and two new members were added—Mrs. C. E. Holderby,

and Mrs. T. E. Painter, both of Williamsburg. The meeting was presided over by the president, Mrs. T. B. Henderson. After a short business session, the program chairman, Mrs. J. B. Porterfield, gave an interesting paper on "The Control of Cancer".

After a delightful social hour, the meeting disbanded to meet in July with Mrs. W. L. L. Smoot.

Truth About Medicine

In addition to the articles previously enumerated, the following are among those which have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association:

Smith, Kline & French Laboratories.

Benzedrine Sulfate.

Benzedrine Sulfate Tablets.

John Wyeth & Brother, Inc.

Wyeth's Suppositories Digitalis Leaf.

New and Nonofficial Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Nonofficial Remedies:

Ampoules Ephedrine Sulfate—Lilly, 1 cc., 0.025 Gm. ($\frac{3}{8}$ grain).—Each ampoule contains ephedrine sulfate—Lilly (New and Nonofficial Remedies, 1938, p. 228), 1 cc., 0.025 Gm. ($\frac{3}{8}$ grain). Eli Lilly & Co., Indianapolis, Ind.

Antipneumococcic Serum, Types IV and VIII Combined.—An antiserum containing antibodies of both Types IV and VIII pneumococci (*Diplococci pneumoniae*).

Antipneumococcic Serum, Types IV and VIII, Refined and Concentrated.—Prepared by immunizing horses with intravenous injections of cultures of Types IV and VIII pneumococci. The serum is refined and concentrated by means of the ethyl alcohol precipitation method described by Lloyd D. Felton. The usual safety and sterility tests are made. The potency tests are based on the method of Lloyd D. Felton. Marketed in packages of one vial containing 10,000 units each of Types IV and VIII and in packages of one vial containing 20,000 units each of Types IV and VIII. Each package contains a vial of normal horse serum (1:10 dilution) for the conjunctival test. Lederle Laboratories, Inc., Pearl River, N. Y.

Antipneumococcus Serum, Types V and VII Combined.—An antiserum containing antibodies of both Types V and VII pneumococci (*Diplococci pneumoniae*).

Antipneumococcic Serum, Types V and VII, Refined and Concentrated.—Prepared by immunizing horses with intravenous injections of cultures of Type V and Type VII pneumococci. The serum is refined and concentrated by means of the ethyl alcohol precipitation method described by Lloyd D. Felton. The usual safety and sterility tests are made. The potency tests are based on the method of Lloyd D. Felton. Marketed in packages of one vial and in packages of one syringe containing 10,000 units each of

Types V and VII; also in packages of one vial and in packages of one syringe containing 20,000 units each of Types V and VII. Each package contains a vial of normal horse serum for the conjunctival test. Lederle Laboratories, Inc., Pearl River, N. Y.

Viosterol (A.R.P.I. Process) in Oil—Lederle.—A brand of viosterol in oil—N.N.R. (New and Nonofficial Remedies, 1938, p. 482). Lederle Laboratories, Inc., Pearl River, N. Y. (*J. A. M. A.*, June 18, 1938, p. 2032.)

Propaganda for Reform

Bile Salts and Arthritis.—Hench (*Arch. Int. Med.* 61:451 (March), 1938) has just made available the results of clinical and chemical studies on thirty-one patients whose rheumatic symptoms were partially or completely relieved coincidentally with the onset of spontaneous jaundice. Attempts to reproduce the relief by administration of whole bile and certain of its constituents were made. Transfusions of deeply jaundiced blood were tried and jaundice was produced by the administration of toluylenediamine; by these means and with the rather small doses used, the phenomenon of arthritic relief was not reproduced. Thompson and Wyatt (*Arch. Int. Med.*, 61:481 (March), 1938) administered a combination of bilirubin and bile salt to eight patients with chronic atrophic arthritis. The combination of bilirubin and bile salt given by the technic which these investigators finally found satisfactory appeared to be effective in the amelioration of symptoms of atrophic arthritis, although neither of the constituents alone produced this effect. Further study and confirmation are required before these observations can be applied generally in the treatment of atrophic arthritis, but the preliminary observations seem most suggestive of a new avenue of approach to this difficult problem. (*J. A. M. A.*, April 30, 1938, p. 1493.)

Selenium in Industry.—The primary purpose of a recent study of selenium reported by Dudley (*Pub. Health Rep.*, 53:281, February 25, 1938) is to point out those industries in which unrecognized hazards may exist as the result of the processing of selenium-bearing materials. He also describes the methods developed for the determination of selenium in the air as dust or vapor, and a satisfactory method of urine examination. Selenium is now widely employed in industry and includes such processes as glass decolorization, plastics, rubber "accelerators," fire-proofing of electric cable, photoelectric apparatus, glass, paint and ink pigments and chemicals. The excretion of selenium in the urine is considered conclusive evidence that workers are absorbing selenium, but more clinical and experimental laboratory work is necessary to establish a differential diagnosis based on the quantity of selenium excreted. Dudley discusses a modification of the previously reported technic of urine examination for selenium so that amounts as low as 0.01 mg. can be determined. The extent of hazard in industries utilizing selenium is related primarily to the type of process. Fumes, vapors or liquids may result in definite dangers by the absorption of organic selen-

ium compounds. Although skin absorption has not been studied experimentally, it has been shown that burns from hot acids containing selenium as the bromide result in the appearance of selenium in the urine within two days. These considerations, Dudley believes, clearly show that selenium presents a potential industrial hazard and that adoption of control measures would be advisable in order to protect workers from injury resulting from absorption of seleniferous compounds. (*J. A. M. A.*, May 28, 1938, p. 1840.)

Oralsulin.—No oral insulin preparation has been accepted by the Council on Pharmacy and Chemistry. Over eleven years ago *The Journal*, in discussing "Enterocap Oralsulin" (December 4, 1926, p. 1935), pointed out the lack of evidence for the efficiency of orally administered preparations of insulin and pancreas. No new evidence has been found to necessitate a revision of the statement published at that time. Recently the federal authorities charged with the enforcement of the Food and Drug Act seized a shipment of Enterocap Oralsulin and declared the product adulterated and misbranded. According to the government report, examination showed that the preparation contained no insulin and that the labeling bore false and fraudulent representations regarding the curative or therapeutic effects of the product (Notice of Judgment 27373). (*J. A. M. A.*, May 28, 1938, p. 1858.)

Book Announcements

Essentials of Obstetrical and Gynecological Pathology. With Clinical Correlation. By MARION DOUGLASS, M. D., F. A. C. S., Assistant Professor of Gynecology, Western Reserve University, and ROBERT L. FAULKNER, M. D., Senior Clinical Instructor in Gynecology, Western Reserve University. St. Louis. The C. V. Mosby Company. 1938. Octavo of 187 pages. With 148 illustrations. Cloth. Price, \$4.75.

The book is primarily intended to give a brief systematic presentation of the essentials of obstetrical and gynecological pathology. It should be very helpful particularly where intensive and systematic instruction is not available, although the very simplicity and superficial treatment of nearly every topic makes it difficult for one not already familiar with these pathological changes to understand much about them. It must be admitted that such a book has been needed and despite the above objections it would be a valuable addition to a medical library, and especially to a hospital library. The salient features which make this book valuable are brevity and conciseness.

J. D. K.

Virginia Medical Monthly

Founded by LANDON B. EDWARDS, M. D., April, 1874

Owled by MEDICAL SOCIETY OF VIRGINIA since November, 1919

WYNDHAM B. BLANTON, M. D., *Editor*

AGNES V. EDWARDS, Richmond, *Business Manager*

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All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Monthly, 1200 East Clay Street, Richmond, Va.

This journal is not responsible for the opinions and statements of its contributors.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Subscription Price: \$2.00 per annum in advance. Single Copies 25c.

VOLUME 65

AUGUST, 1938

No. 3

Editorial

Paré's Books.

Janet Doe is the Assistant Librarian of the New York Academy of Medicine, and *A Bibliography of the Works of Ambroise Paré, Premier Chirurgien and Conseiller du Roy*, prepared by her and issued recently from the University of Chicago Press, completes the fifth of the History of Medicine Series published under the auspices of that Library and is a fine example of its cultural contribution to medicine.

Another book on Paré! We should not be astonished by a new book on Caesar or Bacon or Shakespeare. But what is the perennial interest of Paré for the world? Everyone knows that his chief contributions to surgery consisted in his substituting soothing dressings for boiling oil in the treatment of wounds, in his use of the ligature for the cautery, and in his advocacy of podalic version in difficult labor. But everyone does not know that his dozen or more books—which run the gamut from a small handbook on surgery through works on anatomy, gout, poisons, plague, obstetrics, monsters, natural history, mummy, travel, and poetry, to his massive *Oeuvres*—extend to 113 editions, revisions, translations and imprints. Miss Doe herself did not dream of the number of these publications until letters to the leading libraries of the world concerning the whereabouts of Paré's works brought to light no less than eight editions hitherto unknown.

Miss Doe begins her task where Malgaigne left

off. This French physician and author had shown "the meticulous hand of scholar, historian and sympathetic critic," in the *Oeuvres Complètes* which he brought out in 1840-41. It is invaluable for its critical, biographical and literary notes. Miss Doe, leaning heavily upon it, produces a bibliography which can for the first time claim to be complete.

Taking the form of Geoffrey Keynes's *Bibliography of the Writings of William Harvey*, 1928, her book is far from a mere catalogue of titles. It is a readable account of the books of a man whose writing still lives, having carried his fame to all lands and preserved his memory during a century in which no one arose to supersede him. Of every edition there is a faithful transcription of title page and contents with a record and description of errata, portraits, illustrations, text and type as well as the dates of privilege and printing. The notes are full and interestingly digressive "since the particular interest of each book lies in a knowledge of its antecedents, historical, bibliographical and personal."

The value of Miss Doe's book to librarians and book collectors is obvious. But the *Bibliography* has a wider range of appeal because Paré was more than a bold and successful Sixteenth Century surgeon who rose from the ranks, enjoyed the king's favor, defied the doctors and the Academy of Paris. Paré practiced surgery of such a high order that no one until John Hunter was of the statue to carry on

the task of surgical advance he had initiated. He was also a poet and a student of contemporary manners and customs.

Readers of Miss Doe's *Bibliography* will learn much about Paré as an author and much more about the format and content and sources of his books. We venture to say that many will be intrigued to read again in the Old English of Johnson, if not in the original French, his work "*Of Wounds made by Gunshot, Other Fierie Engeines, And All Sorts of Weapons,*" and his "*Apologie,*" and his "*Voyages.*" If they own copies of some of the rarer editions they will thank Miss Doe for her splendid guide to a more complete knowledge of the rarity and worth of their treasures.

In the Miller Collection of the Richmond Academy of Medicine there are preserved the first Latin Edition, the first Dutch Edition, and the third English Edition of Paré's works.

Woman's Build and Health.

The Metropolitan Life Insurance Company has just issued an informative brochure summarizing an exhaustive analysis of the "ungraduated data on build of women, as reported in 329,627 standard policies." It was found that the average height among this large group of adult women was approximately five feet, four and one-quarter inches. "Analysis of the mortality according to weight classes showed the same trends as the earlier studies on male lives, namely, relatively high mortalities among young underweights, distinctly high mortalities among older overweights and the most favorable build with regard to mortality shifting from moderate overweight at the younger ages to moderate underweight at the older ages. There is some evidence that the excess mortalities are not as great in females as in males. . . . In general, tall women have had the best mortality except at ages under thirty."

The authors believe that their study "has yielded important new anthropometric and mortality data," although it may have to be modified when the substandard data which they are now analyzing are ready. They conclude with the statement that "Our anthropometric data, we believe, indicate the need of some revision of the standard height-weight table.

That table is too smooth and its very smoothness disregards what are probably fundamental changes in weight according to age during adult life. . . . There is some evidence, however, that the penalties that go with underweight at the younger ages and overweight at the older ages are not as severe as in men. This conclusion, however, is stated only tentatively."

Round Tables.

The small informal conference between teacher and pupils has much to commend it. The round table discussion at medical meetings is becoming increasingly popular because it furnishes the nearest approach possible among physicians to this educational method. The American College of Physicians has successfully employed this type of meeting for several years and in the Medical Society of Virginia there is a growing demand for a continuance of this feature, first introduced last year.

The round table discussion affords a splendid opportunity for the brief expression of opinions which you feel are worth recording. It offers an opportunity for the putting of questions which you feel should be asked. It offers a fine comradeship among seekers after knowledge on a common problem.

Round table discussions should revolve around subjects of general interest and be led by able and tactful specialists. They should encourage general but not lengthy discussion, they should move rapidly from point to point without irrelevant digression, and should attempt to answer only those questions which have previously been submitted in writing.

For the 1938 meeting of the Medical Society of Virginia in Danville this Fall five general discussion groups have been planned. A discussion on *Acute Respiratory Diseases* will be led by Drs. Walter B. Martin and David P. Scott; another on *Allergic Diseases* will be led by Drs. Oscar Swineford and Warren T. Vaughan; one on *Etiology and Treatment of Indigestion*, by Drs. A. B. Hodges and F. H. Smith; one on *The Vitamins*, by Drs. George B. Lawson and W. B. McIlwaine; one on *Acute Traumatic Surgery and Fractures*, by Drs. M. B. Hiden and C. E. Keefer. Six special group discussions will include the subjects of *Psychiatry, Obstetrics, Gynecology, Radiology, Urology and Orthopedics*.

Department of Clinical and Medical Education of the Medical Society of Virginia

Pediatrics.

During the month of June Dr. Robert B. Hightower, Instructor in Pediatrics, conducted a post-graduate course in the Clinch Valley area. The interest and attendance on this circuit was unusually good. The following doctors attended meetings at the centers indicated:

NORTON

| | |
|-----------------------|--------------------|
| Dr. G. T. Foust | Dr. Liebman |
| Dr. C. L. Harshbarger | Dr. John R. Massie |
| Dr. C. R. Jones | Dr. T. J. Tudor |
| Dr. T. S. Ussery | |

STONEGA

| | |
|------------------|-------------------|
| Dr. W. B. Barton | Dr. S. P. Gardner |
| Dr. C. Bowers | Dr. J. H. Hagy |
| Dr. G. Bowers | Dr. B. C. Henson |
| Dr. C. B. Bowyer | Dr. D. C. Keister |

APPALACHIA

| | |
|------------------|----------------------|
| Dr. W. N. Botts | Dr. Robert W. Holly |
| Dr. F. E. Handy | Dr. Charles K. Polly |
| Dr. S. H. Rivers | |

PENNINGTON GAP

| | |
|------------------------|-------------------|
| Dr. C. C. Carr | Dr. J. S. McNeil |
| Dr. W. L. Griggs | Dr. J. B. Muncy |
| Dr. Bernard C. Grigsby | Dr. G. L. Pence |
| Dr. W. G. Harper | Dr. Robbins |
| Dr. C. H. Henderson | Dr. G. B. Setzler |
| Dr. G. C. Sumpter | |

GATE CITY

| | |
|----------------------------------|------------------------------------|
| Dr. P. W. Cox (Kingsport, Tenn.) | Dr. H. K. McConnell |
| | Dr. V. W. Quillen |
| Dr. J. M. Dougherty, Sr. | Dr. Wm. H. Reed (Kingsport, Tenn.) |
| Dr. J. M. Dougherty, Jr. | |
| Dr. C. R. Fugate | Dr. Thos. B. Yancey |

Beginning July 18 and extending through the first two weeks in August, a course will be conducted in the upper Clinch Valley. Meetings will be held at Lebanon, Haysi, Grundy, Richlands, and Tazewell.

Internal Medicine.

Plans are being made for a short course in Internal Medicine to be held in the Southwest Virginia area during the summer. Courses in other localities may be organized upon the request of local societies.

GEORGE B. ZEHMER, *Executive Secretary.*

News Notes

Mark the Dates on Your Calendar.

October 4, 5 and 6 should be marked on your calendars at this time as a reminder of the sixty-ninth annual session of the Medical Society of Virginia to be held in Danville. Dr. I. C. Harrison, chairman of the local committee of arrangements, announces that plans are progressing excellently and the local society is looking forward to a large attendance and a good meeting.

The two guest speakers of our president, Dr. G. F. Simpson, are Dr. William J. Mallory, president of the Medical Society of the District of Columbia, and Dr. Frederick A. Willius of the Mayo Clinic, Rochester, Minn. Dr. Mallory will speak on Tuesday evening, his subject being "The Diagnostic Value of the Clinical Aspects of Digestive Disease".

Dr. Willius has been placed on the Wednesday afternoon program at which time he will talk on "The Effects of Protracted and Recurrent Congestive Heart Failure on the Liver".

Round Table discussions will be a feature of this year's meeting and the following subjects and leaders were selected by the Program Committee:

Acute Respiratory Diseases—Drs. Walter B. Martin and David P. Scott.

Allergic Diseases—Drs. Oscar Swineford and Warren T. Vaughan.

Etiology and Treatment of Indigestion—Drs. A. B. Hodges and F. H. Smith.

The Vitamins—Drs. George B. Lawson and W. B. McIlwaine.

Acute Traumatic Surgery and Fractures—Drs. M. B. Hiden and C. E. Keefer.

These discussions can be made much more interesting if the chairmen know exactly what the members wish, so any and all members who plan to attend are asked to send questions or suggestions to the individual chairmen or to the Society's office in advance of the meeting.

Discussions or meetings are also being arranged by the following special Virginia groups: Neuropsychiatric, Obstetric and Gynecologic, Orthopedic, Pediatric, Radiological, and Urological Societies.

The Virginia Radiological Society has been fortunate in securing Dr. B. R. Kirklin, head of the diagnostic radiological section of the Mayo Clinic, to address and take charge of its round table discussion. Dr. Kirklin is a past president of the American Roentgen Ray Society, and chairman this year of the section on radiology of the American Medical Association. Preceding the discussion, Dr. Kirklin will speak on "Differential Diagnosis of Lesions of the Stomach".

American Medical Association.

In the last issue of the MONTHLY, it was reported that at the meeting of the American Medical Association, in San Francisco, June 14-17, Dr. Irvin Abell, Louisville, Ky., succeeded to the presidency, and Dr. Rock Sleyster, Wauwastosa, Wis., was named president-elect. In 1939, the Association will meet in St. Louis, 1940 in New York, and 1941 in Cleveland.

Dr. I. C. Riggan, Richmond, was elected chairman of the Section on Preventive and Industrial Medicine and Public Health; Dr. Robert V. Funsten, University, vice-chairman of the Section on Orthopedic Surgery; and Dr. Hugh H. Trout, Roanoke, member of the executive committee of the Section on Surgery, General and Abdominal.

There was a total registration of more than 6,000 physicians for the meeting. Twenty-nine were registered from Virginia as follows:

Dr. Vincent W. Archer, University.
Dr. C. B. Bowyer, Stonega.
Dr. Wright Clarkson, Petersburg.
Dr. C. C. Coleman, Richmond.
Dr. John Wyatt Davis, Jr., Lynchburg.
Dr. J. C. Flippin, University.
Dr. Richard W. Fowlkes, Richmond.
Dr. R. V. Funsten, University.
Dr. Harvey B. Haag, Richmond.

Dr. Emory Hill, Richmond.
Dr. Philip Jacobson, Petersburg.
Dr. Louise Taylor Jones, McLean.
Dr. John A. B. Lowry, Crewe.
Dr. W. Ambrose McGee, Richmond.
Dr. Hunter H. McGuire, Winchester.
Dr. Walter B. Martin, Norfolk.
Dr. Thomas W. Murrell, Richmond.
Dr. Julian L. Rawls, Norfolk.
Dr. I. C. Riggan, Richmond.
Dr. L. B. Sheppard, Richmond.
Dr. F. H. Smith, Abingdon.
Dr. James B. Stone, Richmond.
Dr. A. L. Stratford, Richmond.
Dr. E. H. Terrell, Richmond.
Dr. C. W. Thomas, Floyd.
Dr. D. M. Thomasson, Lynchburg.
Dr. Hugh H. Trout, Roanoke.
Dr. W. R. Whitman, Roanoke.
Dr. Wm. H. Whitmore, Portsmouth.

Central Control Office Established for State Hospitals.

In accordance with an act of the last General Assembly, a central office for the supervision, management and control of the several State hospitals and the Colony for the Epileptic and Feeble-minded has been established in Virginia. Dr. Hugh C. Henry, for a number of years superintendent of Central State Hospital at Petersburg has been appointed director of State Hospitals with Mr. F. W. Gwaltney as executive secretary. Their offices at this time are in the new Clinic Building of the Medical College of Virginia in Richmond.

Orange County Medical Society.

The regular quarterly meeting of this Society was held on July 1 at the home of Dr. O. N. Shelton. Delegate and alternate to the Danville meeting of the State Society, were appointed. Dr. Shelton gave a review of the book "Digestive Tract Pain".

The next meeting will be held at the office of Dr. J. P. Hankins, Orange, on October 7, at which time election of officers will take place.

The Occupational Therapy Curative Workshop,

The first of its kind in this section of the country, was recently opened for operation. It is located on the ground floor of the Mayo Memorial Church House, entrance at 101 North Jefferson Street in Richmond, this space being donated by the Episcopal Diocese of Virginia.

The Workshop was established by a group of public-spirited citizens of Richmond to assist in the

cure of and aid in the welfare of crippled children through exercises definitely prescribed and guided. The exercise is achieved by carefully adapting a craft to the exercise needed.

Chartered as a non-profit organization, the facilities of the Workshop are available to patients of normal mentality, referred by any doctor in the city or vicinity, and while its main object is charitable and benevolent, a reasonable charge will be made to those patients who are able to pay. Both white and colored patients are accepted (separate hours being allotted to each), and at the present time, patients are entered with disabilities due to the following causes: poliomyelitis, tuberculosis of the joint, arthritis, Legg's Perthes' disease, cerebral birth palsy, fracture, accidents (burns, etc.), and muscular dystrophy. In the cases of osteomyelitis, tuberculosis of the joints and muscular dystrophy, where rest is indicated, projects are graded to the limits of energy output, indicated by the doctor.

The Workshop is open from 9:00 A.M. to 5:00 P. M., daily, except Saturdays, and is in charge of a graduate occupational therapist, under instructions from referring physicians.

All doctors in and near Richmond are invited to visit the Workshop and make use of its facilities. The telephone number is 2-9385.

The Lewis-Gale Hospital,

Roanoke, announces the addition to its staff of Dr. W. L. Sibley, surgeon and proctologist, formerly of Rochester, Minn., and Dr. Fred Davis, of Roanoke as orthopedic surgeon.

Married.

Dr. John Kirk Richardson of Richmond and Miss Loula Clyde Woody of New Kent County and Richmond, June 24.

Dr. Edwin McRae Rucker, son of Dr. and Mrs. M. P. Rucker of Richmond, and Miss Nancy Connelly Johnston of Nicholasville, Ky., July 9. Dr. Rucker is an alumnus of Duke University at Durham, N. C., and is now on the staff of Duke Hospital.

Dr. William Clinton White, class of '37, University of Virginia Department of Medicine, and Miss Frances Evelyn Daniel of Greenville, S. C., July 2. Dr. White is now on the resident staff of Walter Reed Hospital in Washington, D. C.

Dr. Walter Glenn Hardy, class of '37, Medical College of Virginia, and Miss Ethel Davis Killinger

of Rural Retreat, July 2. Dr. Hardy recently completed his internship at Lewis-Gale Hospital in Roanoke and has located for practice at Stanleytown.

Dr. William H. Higgins,

Richmond, was one of the guest speakers before the Tennessee Post-Graduate Assembly which was held in Knoxville, June 22-24.

Dr. James E. Hemphill,

Class of '37, University of Virginia Medical School, has recently been appointed and commissioned as Assistant Surgeon in the Regular Corps of the U. S. Public Health Service. He has been serving an internship at the U. S. Marine Hospital, in Baltimore.

Dr. William W. Butzner, Jr.,

Has opened offices in Fredericksburg for the general practice of medicine. He is a graduate of the University of Virginia, Department of Medicine, in 1935.

Dr. R. S. Montgomery,

South Hill, has been named a member of the Rotary Club Committee to sponsor the local Boy Scouts.

The Hawaii Medical Service Association

Has been organized, this providing medical and hospital care on a monthly payment basis, similar to plans adopted by a number of other societies. The plan started in Honolulu, Oahu, with a membership of over one thousand and is rapidly increasing. It is expected that other islands in the Hawaiian group will participate.

Dr. J. M. Hitch,

Recently connected with the Department of Syphilology and Dermatology of the University of Virginia Medical School, has located in Raleigh, N. C., with offices at 127 West Hargett Street.

Third International Goiter Conference.

Preliminary programs have been issued for this Conference which is to be held in Washington, D. C., September 12, 13 and 14, with headquarters at the Mayflower Hotel. The scientific sessions are open to members of the medical and allied professions who are in good standing. Further information may be obtained from Dr. W. Blair Mosser, Kane, Pa., corresponding secretary of the American Association for the Study of Goiter.

Dr. Beverley R. Tucker

Of Richmond was one of several doctors invited by the Florida State Medical Association to participate in its course of post-graduate lectures at Daytona Beach in June. Dr. Tucker gave a series of six lectures in neuropsychiatry.

American Congress of Physical Therapy.

The 17th annual scientific and clinical session of the Congress will be held cooperatively with the 22nd annual convention of the American Occupational Therapy Association, September 12-15, at the Palmer House, Chicago. The convention will have numerous special program features—a variety of papers and addresses, clinical conferences, round table talks, and extensive scientific and technical exhibits.

Preceding the sessions, the Congress will conduct an intensive instruction seminar in physical therapy for physicians and technicians—September 7-10. This should prove of interest to everyone interested in the fundamentals and new advances in physical therapy. The faculty will be comprised of experienced teachers and clinicians; every subject in the physical therapy field will be covered. Information may be obtained from the American Congress of Physical Therapy, 30 N. Michigan Ave., Chicago.

Film on Life of Edward Jenner.

The Metropolitan Life Insurance Company has issued a new film strip on the life of Dr. Edward Jenner to accompany the other strips already available in the Health Heroes Series. This is obtainable without charge and information may be had from the Company at 1 Madison Ave., New York, N. Y.

The Leslie Dana Gold Medal,

Awarded annually for "outstanding achievements in the prevention of blindness and the conservation of vision" will be presented this year to Dr. Ellice M. Alger of New York City. He was one of the founders of the National Society for the Prevention of Blindness and has served continuously on its Board of Directors. Dr. Alger is professor of ophthalmology at the New York Post-Graduate Medical School and surgeon to its hospital. He has written a great deal on the various phases of his specialty.

Dr. Paul K. Candler,

Class of '36, Medical College of Virginia, after completing his internship and a years' residency in

surgery at the Norfolk General Hospital, is now associated with Dr. L. E. Cockrell, of Reedville.

The International College of Surgeons

Will hold its Second National Assembly in Philadelphia, October 13 and 14, with headquarters at the Bellevue Stratford Hotel. All members of the medical profession of good standing are cordially invited to attend the scientific program and various clinics. There will be no registration fee. Dr. Charles H. Arnold, Terminal Building, Lincoln, Nebraska, is secretary to the Scientific Assembly.

Dr. C. H. Mauzy,

Class of '33, Department of Medicine, University of Virginia, has located in Winston-Salem, N. C., with offices in Nissen Building, where his practice will be limited to obstetrics and gynecology. He served an internship at the Cleveland City Hospital, and has since been serving in the obstetrical and gynecological services of Duke Hospital, the University of Virginia Hospital, and the Gallinger Hospital, in Washington.

The New York Polyclinic Medical School and Hospital

Announces that a special department of Facial Palsy has been established there for teaching purposes, with clinics every Thursday, at two o'clock. This department is in charge of Dr. Thomas G. Tickle and his staff.

Dr. Frank H. Hedges, Jr.

Formerly of Richmond, has located in Joliet, Illinois, where he is engaged in the practice of orthopedics.

Dr. E. V. Richardson,

For sometime at Marion, Va., is now located at Jewell Valley, Va., where he is associated with Drs. R. Brittain and G. C. Williams at the Jewell Ridge Hospital.

The Petersburg Hospital Medical Faculty

Had a luncheon meeting with Dr. Thomas Wheelton, Richmond, at the Commonwealth Club, on June 22. Seventeen members were present. The Faculty plans to hold a series of "get-together" meetings throughout the summer months, these taking the place of the regular staff meetings.

The American College of Physicians

Will hold its twenty-third annual session in New Orleans, March 27-31, 1939. Dr. William J. Kerr,

San Francisco, is President of the College and will have charge of the program of general scientific sessions. Dr. John H. Musser, New Orleans, has been appointed general chairman of the session and will be in charge of the program of clinics and demonstrations and the round table discussions.

American Board of Obstetrics and Gynecology.

The next written examination and review of case histories of Group B applicants will be held on Saturday, November 5, 1938. The last day for applying is September 5. The next general examination for all candidates will be held in St. Louis in June, 1939.

Application blanks and booklets of information may be obtained from the secretary, Dr. Paul Titus, 1015 Highland Building, Pittsburgh (6), Pa.

Personnel News From State Health Department.

A single county health department has been installed in Buchanan County with Dr. Paul J. Bundy as Health Officer. Russell and Tazewell Counties will continue with a joint department under Dr. Turner.

Scott County has discontinued its appropriation toward the support of the local health department, but Dickenson and Wise will continue under Dr. G. R. Carpenter, who has been appointed Health Officer to replace Dr. J. R. Massie, resigned.

Dr. J. L. Hundley, Wytheville, has tendered his resignation as Health Officer. His successor has not been appointed.

The following men were assigned to the health departments named, for training for approximately thirty days, beginning July 1: Dr. S. J. Beeken, Augusta County Health Department; Dr. C. H. Bondurant, Pulaski County Health Department; Dr. E. B. Shepherd, Fairfax County Health Department; and Dr. Wm. Y. Garrett, Northampton County Health Department, being transferred from Prince William.

Radford City is now a part of the Montgomery County Health Department.

Dr. Kenneth F. Maxcy,

Formerly on the faculty of the Medical Department of the University of Virginia, has just been named professor and head of the department of epidemiology of the Johns Hopkins University School of Hygiene and Public Health.

Dr. Nathan Bloom,

Richmond, announces that after August 1, his address will be changed from 1009 to 1006 West Franklin Street.

Dr. Charles W. Warren,

Recently located at Upperville, Va., is now at the U. S. Marine Hospital in Baltimore, Md.

Dr. Joseph H. Smith,

Farmville, has been named chairman of the committee on Crippled Children of the Farmville Rotary Club for the next year.

Dr. James D. Clements,

Ordinary, was recently installed as vice-president of the Gloucester Rotary Club.

Fight to Wipe Out Diphtheria.

During the last session of the Legislature, a Bill sponsored by Dr. Francis Lee Thurman, Chairman of the Buena Vista Board of Health, was passed giving the power to the Boards of Health of the various cities and counties of the State to make compulsory the giving of toxoid and other preventive measures against diphtheria to all children from six months to six years of age.

Buena Vista has started on an active campaign to immunize all children in the age limit and recently set aside two days for this work, which was to be done by the Board of Health or a private physician. The charge to those who could pay was fifty cents, while those unable to pay were taken care of through relief agencies.

Dr. Mason Romaine,

Petersburg, sailed the latter part of July, with a party of friends, for a tour of England, Scotland and Wales, and will visit the cathedrals in these countries. They expect to return the middle of September.

Railway Surgeons to Meet in Chicago.

The 23rd annual meeting of the American Association of Railway Surgeons will be held at the Palmer House, Chicago, September 19 to 23, 1938.

This association includes members in practically every railroad company in the United States, as well as the separate group organizations.

An extremely interesting and highly profitable program has been arranged and all physicians and surgeons are invited to attend the sessions of this meeting as guests of the organization. There will

be no registration fee to M.D. non-member guests.

In addition to the scientific exhibits, a technical show will be held, including the presentation of new equipment, advanced types of therapy, new pharmaceutical and biological products and the latest techniques in many branches of the profession.

A cordial invitation for you to attend is extended by Dr. Harvey Bartle, President of the Association. Complete program and information regarding the meeting and the exhibits may be secured by addressing Mr. A. G. Park, Convention Manager, the American Association of Railway Surgeons, Palmer House, Chicago, Illinois.

Wanted—

A set of six or seven volumes of Bickham's Operative Surgery. Write "Bickham's Surgery", c/o the MONTHLY. (Adv.)

Home for Convalescences.

A home for the care and treatment of chronic aged and convalescences has been opened at Arrington, Nelson County, Virginia, under the care of Dr. and Mrs. Fred M. Horsley. Information upon request. (Adv.)

Obituary Record

Dr. Edward Cary Ambler,

Roanoke, died July 11, after an illness of three days. He was a native of Lynchburg and sixty-eight years of age. Dr. Ambler graduated from the Medical College of Virginia in 1897, following which he had spent most of the time practicing in Roanoke. He was actively interested in the medical affairs of his community and was a past president of the Roanoke Academy of Medicine. He had also been a member of the Medical Society of Virginia for thirty-eight years. His wife and three children survive him.

Dr. Oscar Clyde Page,

Well-known physician of Brodnax, died July 1, having been in ill health for about eighteen months. He was fifty-three years of age and a graduate of the former University College of Medicine, Richmond, in 1911. Dr. Page was one of the first to volunteer for service in the World War and served

as a surgeon in a London Hospital. Following the War, he practiced in Hopewell and Newport News, and then returned to Brodnax. Dr. Page had been a member of the Medical Society of Virginia for twenty-two years. His wife and five children survive him.

Dr. William Lee Gannaway,

Abingdon, died April 17, of coronary occlusion. He was sixty-eight years of age, and received his medical degree from the University of the South, Sewanee, Tenn., in 1901. Dr. Gannaway had been a member of the Medical Society of Virginia for thirty-seven years.

Dr. R. Lee Taliaferro,

Madison Mills, died July 19, at the age of sixty-six years. He was a graduate in medicine from the University of Maryland in 1893, and took an active part in the professional and civic life of his community. Dr. Taliaferro was for a number of years a member of the Medical Society of Virginia. His wife and a daughter survive him.

Dr. Edward Maupin Gayle,

Portsmouth, died June 22, following a heart attack. He was sixty years of age and a graduate of the Department of Medicine, University of Virginia, in 1902. Dr. Gayle was one of the founders of Westbrook Sanatorium in Richmond and was connected actively with it for about six years. He was formerly a member of the Medical Society of Virginia. Dr. Gayle is survived by his wife and a daughter.

Dr. Jasper N. Walker,

Bastian, Va., died April 8, at the age of seventy-one. He graduated from the University of Virginia, Department of Medicine, in 1898, and was formerly a member of the State Legislature and secretary of the Board of Health of Bland County. Dr. Walker was formerly a member of the Medical Society of Virginia.

Dr. Lester Lawrence Anderson,

Stoneville, N. C., died April 18, of coronary thrombosis. He was thirty-five years of age and graduated from the Medical College of Virginia in 1927.



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OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

69th Annual Meeting, Medical Society of Virginia, Danville, October 4-6, 1938

Vol. 65, No. 9.
WHOLE No. 1035.

RICHMOND, VA., SEPTEMBER, 1938

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INTERNATIONAL MEDICAL ASSEMBLY



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RICHMOND, VA., SEPTEMBER, 1938

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THE LURE OF MEDICINE.*

HENRY A. CHRISTIAN, M.D.,
Boston, Massachusetts.

An hundred years of life, long so far as man is concerned, brief in the life of institutions of learning, have passed since your birth in 1838, an hundred years of useful activity on the part of the Medical College of Virginia in the training of men and women for the beneficent calling of medicine and the allied disciplines of dentistry, nursing and pharmacy. To you, the Medical College of Virginia, I bring greetings from an elder brother, the Medical School of Harvard University, now finishing out one hundred and fifty-six years of existence, like you still lusty and lacking in signs of senility. From a professorial chair, continuously occupied without change of title since Christmas Eve, 1782, when the first Professor of the Theory and Practice of Physic was elected, I, the eighth to occupy that chair at Harvard, bring greetings and good wishes to your Professor of Medicine. When your School began, my School had completed over half a century of existence and was being carried on in its fourth home, the last two having been buildings especially constructed for the purposes of a medical school, presumably adequate at that time for all the needs of medical education and yet how different from the quarters that now your school and mine consider necessary for the proper education of medical students.

To you, young people, students in this School of Medicine undergoing training in medicine, dentistry, nursing and pharmacy I give greetings from your fellow students in Boston. To you, graduates of this school and members of its Faculty I proffer my greetings as a colleague in the calling of medicine. To you of the medical profession I will address myself more especially today, but in a way that I trust may not prove entirely uninteresting to the non-medical members here present as friends and well-wishers of the Medical College of Virginia.

*An address delivered June 7, 1938, in Richmond, Va., in celebration of the Centennial of the Medical College of Virginia.

Why do men and women study medicine? What is the lure of medicine? Why is it that many the world over are eager to devote many hours to its study and spend a lifetime in its practice? There must be something very appealing in medicine, or else so many would not seek it out, with all its difficulties, as a life's work. I wonder how often you have pondered over this, and what have been your conclusions concerning this problem?

Most assuredly none have entered on the study of medicine, and the same applies to dentistry, pharmacy and nursing, in the belief that training for it was short and simple and its subsequent practice an easy life. Merely to try to obtain entrance to any medical school would turn away those not stout of heart.

As I see it, a prime fascination of medicine is that it is a never-ending study. Merely not to forget what you have learned cannot keep you ready for the obligations of medicine. Without forgetting anything that you learn in medical school, soon as physicians, surgeons, specialists, etc., you will become hopelessly behind the times, unless you continue to study. Not forgetting will not keep you from rapidly losing out in medicine; what you may know soon is apt to be completely outmoded by new discovery. In your medical school days, I dare say, this idea of a never-ending study did not seem such a joy. However, stop to think: how dull a profession medicine would be, if in a four years' study in the medical school you had learned all that was needed to practice the profession the remainder of your lifetime. That sort of a profession would not attract into it red blooded young people.

Happily, medicine is far different. No single mind now can master all that is known of medicine, and could he master it, by tomorrow there would be new things to learn, because knowledge is progressing by leaps and bounds, far more rapidly, I feel

sure, than most in this audience realize. Many conditions that my senior students now easily recognize were not known to even the most learned professor of my own student days. In the thirty years that now I have sat in the professorial chair of the Theory and Practice of Physic at Harvard many times and oft have I had to change what I taught to my students, ever insisting that not the facts but the ways of medical thought were the important things, so that they might ever be able wisely to make use of the new and wisely to discard the old as it was successfully replaced by the new. Because there is so much to learn, however, is no reason for saying that the task is too great. That is the excuse of the lazy. It is the reason why numerous men deliberately choose a very narrow field of medicine and then do not even keep up in that. The industrious, the truly capable, ever studies patients and books, sets few limitations on the scope of his medical interests and goes far in whatever branch of medicine he undertakes.

Study of medicine has all the fascination of exploration. Each new patient is a problem; on any day you may see for the first time something in disease and its reactions to treatment entirely new to you, possibly entirely new to all of your colleagues. This, however, you will miss unless you practice medicine in the spirit of the explorer, the investigator.

In early colonial days there went from this Commonwealth bands of men with their families. Their faces were turned towards the setting sun. They were pioneers, explorers of new lands. From their loins sprung a second generation, similarly minded, who pushed further westward. In turn a third generation and ever those restless spirits, dissatisfied with what was about them, ever ready to push onward into the unknown, and so this land of ours was explored and settled. In other parts of the world the same process went on. Now the explorer finds but few lands to push into. This type of restless spirit has become the investigator pushing on into the hazy and unknown domains of science and art. Medicine is such a field, and rich have been the rewards of its explorers. Investigation in medical fields is a very definite lure to medicine. In a sense every medical man explores, investigates and experiments in his daily practice. To make a diagnosis and plan a line of treatment is both an investigation and an experiment as far as the mental attitude of the physician is concerned. Any practitioner may become a contrib-

utor to medical knowledge. Perhaps one of the least well understood phases of medicine concerns itself with the beginnings of disease and the effects of treatment, fields of study particularly open to general practitioners. Much of great value can come from the careful, consecutive observation of patients encountered in one's daily practice.

The opportunity to extend even a slight distance the range of our knowledge is a very great attraction to one to enter upon medical work. There is a very great satisfaction in feeling that you know a little more about some medical subject than does any one else and that by your own work you have added something to medical lore. No one can know in advance how important may become a single discovery. There are very many opportunities for the medically-trained man who wishes to investigate a problem. Men with some demonstrated ability in investigation are eagerly sought for in the research institutes, medical schools and hospitals of our country. Perhaps today there is as great an opportunity for the investigator in medicine as in any other subject.

Much of the investigation in medicine differs from other investigation in that it is of value not alone for the discovery that is made, but during the work it may bring help to a considerable number of individuals. This is particularly true of clinical investigation. The study of any disease in man necessarily involves the minute investigation of individuals suffering from that disease, and this carries with it a better diagnosis and treatment than would be possible were the disease not under special study. It is very generally recognized today that those hospitals give to the patients the best service and the most satisfactory care in which investigation is being carried on. Both for patients and for physicians investigation is a real good.

Another lure of medicine lies in the fact that medicine concerns itself very largely with human beings either individually or collectively. Nothing is more interesting than the human personality and perhaps none come so intimately in contact with it as the physician. Literature in large part is the mirroring of personality, and yet few see it bared to inspection as can the physician, as he watches the flow and ebb of disease in its struggle with man. To those who are deeply interested in their fellow men, medicine offers a peculiar opportunity to study and to help. Perhaps no other profession, with the possible ex-

ception of the ministry, gives such a chance for usefulness to one's fellows. The human relations of medicine to many prove to be its greatest attraction and in them the physician exerts a tremendous influence for good in the community in which he dwells.

Often to medical men comes the opportunity for wise leadership in civic affairs and particularly such as concern public health matters. The honest physician in a community should, by his unselfishness of purpose and by his unusual type of contact with his patients and their families, have a large influence, and many do, provided they do not get entangled in the petty bickerings that so easily develop between groups of medical men, especially in the smaller communities, and not infrequently in the large. In these matters the physician of big heart and healthy mind can be of inestimable value. The perpetuation of local cliques and personal animosities in any community means that there no medical man is big enough to forget personalities for the good of all and no one has real leadership; this is a criticism, in last analysis, on every member of that medical group. I know of many towns and cities in which happy professional interrelations can be traced easily to one medical man, trusted and loved by all. Alas, how badly is such an one needed in many places. The opportunity to wield a fine influence of these sorts is another attraction to enter the field of medicine.

If medicine is a subject which lures one by the interest it evolves as a never-ending study of its constantly progressing knowledge, by the opportunities it offers for exploration in the domain of the unknown and by the chance it presents for human contacts and helpfulness to one's fellows, what sort of a career may the man entering the profession of medicine look forward to? After the student has completed his primary medical education in the medical school and had a practical training as a house-officer in some hospital, there are a number of paths he may choose.

The larger percentage of the men will select general practice. To these will come perhaps the maximum of service to their fellow townsmen and to them falls the lot of seeing diseases in its beginnings and to watch its progression year by year, if the disease is of a chronic progressing type. Most towns now have hospitals, and these are being rapidly developed so that they are not alone surgical operating rooms and nursing homes, but have equipment for special examinations and laboratory tests. Here the general

practitioner may take his more obscure and more serious cases for special study and treatment.

As time goes on, the general practitioner may become especially interested in some particular diseases, and by reason of this interest and his special study of the subject he comes to be known as one particularly skilled in the diagnosis and treatment of that disease, so that there is an ever-increasing resort to him of these special patients. With his time devoted largely to a limited field his opportunity for investigation is increased, and he becomes a contributor of valuable new knowledge of the disease to whose study and management he now very largely confines himself. The best type of specialist is produced by this sort of development, for in all his special knowledge he has the background of a wide, practical experience with a variety of diseases and with men.

Other general practitioners by reason of more thorough study and greater native intelligence acquire the reputation of sound medical knowledge, common sense and experience and come to be sought more and more in consultation by their fellow practitioners so that by degrees they cease general practice and devote their entire time to consultation practice.

How are the great consultants made? How does one become a perfected diagnostician? These are questions that naturally come to your mind. The answer is hard work and incessant study of patients. Development is gradual; it results from much reading in order to know the possible variations that may be expected in disease in your patients; a retentive memory of what one reads and sees is essential; the high-developed clinician examines his patients carefully and minutely; he recalls the course of disease in past patients and becomes a prophet of the future course of disease in each new patient; he knows from experience the possibilities and the failures of treatment; he is cool and collected; he plans a campaign of therapy and pursues it day by day, not easily driven from his plan unless new conditions develop. Remember that probably more diagnoses are missed from not looking than from not knowing. Persistently experience and knowledge are increased; eventually by reason of attainment in experience and knowledge increasingly the physician is sought by other physicians for help in solving their problems; he has become a consultant.

Many men by preference remain general practitioners throughout their lives. The human relation-

ships of general practice make a strong appeal to them. None do a finer work. They become counselors and guides to their patients, they live lives of great usefulness, and for the most part they earn a satisfactory competence in a work that they enjoy. Conditions for general practice are improving each year.

For those to whom mechanical manipulations appeal, surgery and the surgical specialties are open. Public health work is a new field that has developed to attract men. For it one should possess both administrative ability and a certain sort of missionary spirit to allow him to put great enthusiasm into the necessary propaganda of public health work, and with these must go a flare for politics if his success is to be great.

For those who do not care for these various contacts with patients and communities, but who are more interested in investigation and teaching, the preclinical sciences, such as anatomy, physiology, pharmacology, chemistry, pathology and bacteriology, offer many opportunities. In all of these fields there is a dearth of well-trained men. To these men the opportunity for investigation is very large. Their human interest comes largely in their contacts with students with its appealing opportunity to influence men in the formative stage of their career. To many of these teachers their measure of success lies in the stimulus they have given to students working under them more than in their own individual investigations.

In a similar way there are opportunities to teach and to investigate in the clinical branches, and with recent developments in medical education there are very many opportunities here for well-prepared young men. In the better organized hospitals there is a super-resident staff of men with roughly half

their time free for investigation. Living as they do in the hospital in constant touch with patients and clinical problems, in association with others in the same rank and under well-trained and stimulating superiors, these residents for from two to five years are under nearly ideal conditions to perfect themselves for teaching, clinical investigation or consultation work with a progression from grade to grade after they leave the hospital as their ability justifies. This perhaps is the best road to success in these fields.

If I may give my personal experience, let me say to you young men in medicine there is no more delightful work than falls to the lot of a chief of service in a hospital closely associated with a medical school. The patients and their diseases are problems of never-ending interest. To see their suffering and sickness ameliorate under your supervision is exceedingly gratifying. The ward visiting with intelligent undergraduate students is stimulating. House officers and residents are a picked group of men, very responsive to leadership, very stimulating to you to give the best that is within you. As they leave your service, you follow their course much as a father delights in the progress of his children, rejoicing in their success and sorrowing in their failures and misfortunes. As you travel about the country, meeting your old boys is one of the greatest of pleasures. I know of no greater satisfaction than this sort of relationship with young medical men.

Almost everyone working in these various fields of medicine has much the same feeling as I have expressed about my own, and would say to you, as I would say, great is the lure of medicine, meaning by "lure" its dictionary meaning, "a thing that attracts by the prospect of pleasure and profit."

Peter Bent Brigham Hospital.

OF SIN AND PUNISHMENT.*

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You can easily surmise that the young woman of twenty-odd, whom you do not see, is depressed. Her facial appearance, her manner, and all her movements indicate lessened vitality and absence of

happiness. She has been sitting in heavy judgment upon herself. She has a poor opinion of her own character. She has come to believe that her whole life has been filled with wrongdoing and that her mind has been occupied by sinful thoughts. The conviction of personal guilt dominates her. She re-

*Read before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, Va., October 12-14, 1937.

jects the suggestion that she may not be well. She says that she is entirely well, but that she has been made miserable by the discovery that she is a bad woman. She is without hope of improvement. She must be punished. She deserves it. To attempt to escape it would be wrong. She is doing her best to punish herself by condemnation of herself. But she lacks adequate facilities for dealing with herself as she deserves to be dealt with. She has told me of her thought of ending her own life in order that she might straightway go to Hell where she would be made to suffer supremely in mind and in body forever and forever.

If you could look upon another, a middle-aged, highly intellectual professional man, as I see him in memory, you would instantly know that he is unhappy and miserable. He has become incapacitated for his usual activity by the realization of his own depravity and the hopelessness of his own predicament. He thinks he is physically as sound as he looks to be, and he is a handsome, robust-looking man. But somatic soundness is of no help in the presence of such wretchedness. He not only invoked divine displeasure and the wrath of Heaven but he did it wittingly by his sinful practices. He induced his wife to have no more children, and the method adopted by them to limit the size of their family amounted only to concealed murder. Of course he should not escape Hell. Why have Hell if such as he are to escape it?

And if you could see still a third, my elderly, be-whiskered, miserable old friend, as I knew him several years ago, you could hear him, also, for his groanings are distressing as he paces back and forth and wrings his hands. More than thirty years ago, in settling an estate, he withheld a dollar and a half from the widow and the little children. All night long he has been calculating and compounding the interest on that amount, and he has begged me to dispatch the letter he has written his nephew in confession of his theft. He has besought his nephew to send a generous check to the oldest child for the amount of the defalcation and with added interest. But the transfer of no amount of money can make atonement for his wrongdoing. He has searched his Bible for comfort; he has found only condemnation. He, too, must die and go to Hell.

These patients have not been complaining of imaginary ailments. Their suffering is as real as if caused by pleuritic pain or by kidney colic. There is, indeed, no imaginary ailment.

Marvel not, nor chide me, for inviting you into the world of the impalpable and the invisible. In that vast domain, more real than reality itself, lie all our personal problems, yours and mine and all others, and there live fear and courage and joy and sorrow and peace and happiness and hope and despair and pain and comfort and success and failure. No one of intelligence can look upon matter and deny either its existence or its importance, nor can one of sense and spirit think otherwise than with reverence and awe of that boundless dominion of the unseen, where God Himself lives and where our own better parts go for sustenance and inspiration. In ages yet unborn it may be discovered that only the immaterial is immortal, and that mind and matter may be but different aspects of the same thing. No one can doubt the reality of the unreal, if we allow ourselves to think of the unreal as the imponderable and the unseen. Nothing is so weighty as the weightless; nothing so big as the boundless; no sound is so impressive as silence; no object is so obvious as the unseen. Matter often obstructs our vision and dulls our perception. Man's better parts can not be seen or palpated or weighed or measured. They can be merely sensed.

Daily difficulties in the practice of our profession lie not so much in our dealings with physical disease as in our dealings with the attitudes of our patients to their own conceptions of their own conditions. The emotional concomitants of disease cause chief trouble to our patients and to us. We are constantly trying to cheer their spirits, revive their hopes and allay their fears. We deal with physical ailments with a rather confident and assured air. But when our patients tell us that they are suffering because they have taken a promenade down the primrose path, that they have eaten of the forbidden fruit, that they have sinned against the Holy Ghost, and that the door of hope has been closed against them, then we realize that we are called upon to deal with spiritual attributes, to wrestle with powers and principalities, and with the angels of darkness. And we feel rather helpless. Because our whole philosophy of life is so materialistic we scarcely know how to conceive of an abstraction. And we experience great difficulty in knowing how to deal with an emotional upheaval or a spiritual traumatization.

We physicians constantly carry with us certain mechanisms by the use of which we find out whether or not some of the physiological functionings have

departed from their normal standards. The little hand of our watch tells us about the cardiac and the respiratory rate; and the use of the mercurial column in the thermometer gives us a fairly accurate conception of the rate of physical combustion. And the graduated tape makes possible other mensurations. The weighing scales tell us somewhat of physical ponderosity. Even within the brief time that most of us here have been in the practice of medicine the measuring devices made use of in diagnostic endeavor have enormously increased in number. And by just so much have they often displaced the use of our senses and of our critical judgment. But the use of no mechanism can serve as a satisfactory substitute for the application of intelligence.

And we utilize devices, too, of another sort, for making measurements of certain human attributes, or qualities. We form opinions, for example, of the characters and temperaments and personalities of our fellow-creatures and of ourselves. To do all these things upon ourselves and upon others we carry with us at all times certain mechanisms. The device that we use most often upon ourselves we call conscience. And the mensurator that we use upon our fellows may be called, I suppose, our judgment. But the exercise of judgment is so difficult that God Himself forbids us to judge. But we risk it anyway.

We have, indeed, many measuring rods. Amongst them are: conscience, as I have said; and judgment, and our conception of God, probably always incorrect; and public opinion, and law. But all our attitudes and our opinions are influenced, of course, by our fears, our lack of courage, our hypocrisy, our avariciousness, and always by our ignorances; and the latter I pluralize, because we are profoundly ignorant in depth and in scope. And often we compensate; the more ignorant we are the more gravely judicious we seem to be anxious to appear. But knowledge carries with it always an air of certainty that suggests neither vanity nor humility.

The world in which we live is partially animate, but I do not know that it is conscious of our presence, or, if so, that it cares for us or is impressed by us. I know of no reason for believing that the world has either respect or regard for us; nor do I know of any reason for believing that it invites us or yields to us. The indications would seem to be that all the steps in the adaptive process must be

taken by us. An important question arises: Are we able to know what adaptations to make? Are we able and willing to make them? An early and a constantly recurring personal necessity in life is an inventory of ourselves—an estimation of our resources, and a measure of our willingness and of our capacity to fit ourselves into the environmental mould. But we are heavily handicapped in our attempts to know ourselves—handicapped by ignorance, by unwillingness to know ourselves, and perhaps by fear of ourselves as we really are, and by the emotional fog in which we live.

But, at any rate, we are constantly estimating ourselves—superficially, hurriedly, fearfully, favorably, unfavorably, rationally, irrationally, judiciously, injudiciously, defensively, nakedly, ignorantly, and sometimes with a touch of wisdom. In consequence of such jumbled and vacillating dealing with ourselves, is it little wonder that our own conceptions of our own selves are so invalid? Let us remember how differently we think of ourselves at different times and under different circumstances. The Psalms of David reveal to us how variable was his own opinion of his own character, and how changeable were his moods. Many of those whose names occupy columns and pages in the world's solemn story have been cursed or blessed by mighty mood swings. David and Saul each knew the grandeur of elation and the depths of despair. Lamb and Coleridge and Swift and Carlyle and Napoleon and Lincoln and Shelly and Poe walked on the river's brink and looked longingly to the distant, untroubled shore. It may be true that every great soul in sorrow has contemplated the possibility of suicide.

We would seem to be fatalistically cursed both with incapacity to understand ourselves and with inability to accept ourselves. In consequence of such pendulistic temperamental mood swings that most of us unavoidably indulge in, we are neither able to curb the injudicious extravagances begot by recurrent roseate optimistic impulsions, nor to believe it possible ever to clamber out of the well into which we are not infrequently dropped by an inexplicable downward dip of the emotional decline. But such cycloidal mood mutations seem to be inherent in most of us, yet we apparently devote little attempt to analyze and to understand such interesting and such influential phenomena. Omar Khayyam, the great Persian introvert, knew much of his inner self and, therefore, of all mankind, and of

man's antithetical tendencies: I myself am Heaven and Hell.

Yet we generally experience disheartening difficulty in dealing judiciously with the thing that is near at hand both in time and in space. The passing of time is necessary for proper appraisal of deeds and of doers. Not for many centuries perhaps have the people of the whole world been so stirred and shaken as at this time, but we are too much a part of the cataclysm to be able to understand it or even clearly to record our conception of it. Revolutions, like earthquakes, are felt, not understood.

We live individually more or less upon an emotional see-saw. At one moment our estimate of ourselves is elevated; at another moment our appreciation of ourselves is down near to the earth. And not infrequently we may feel actually hostile to ourselves. When such a feeling reaches an extreme degree suicide may occur. I think of suicide, indeed, as often a form of homicide. The individual does not always intend to kill himself, but only to kill that intolerable portion of himself with which he can no longer live with comfort and with self-respect. The most egotistic of us, and even those who would seem to have formulated a high appraisal of themselves, may be only trying to fool both themselves and the rest of us. They may be struggling to think approvingly of themselves only in an effort to avoid condemnation of themselves.

Most of us doubtless daily disapprove of ourselves because of our many derelictions and digressions if not of actual crimes and sins. And the feeling of guilt when one has succeeded in convicting oneself calls always for punishment even as thirst calls for water and as hunger demands food. The sense of guilt evokes a demand for punishment to relieve the tension and to restore emotional and spiritual equilibrium and to bring peace to the soul. With many an individual who has convicted himself, justly or unjustly, of the perpetration of a wrong or the commission of a crime, suffering will increase and become more and more aggravated until relief and equilibration have been brought by the application of punishment fit in quality and adequate in quantity.

Man seems to be strongly inclined to convict himself of guilt and to subject himself to punishment. We seem to be unable to avoid holding court upon ourselves. But we make the mistake of doing it with our emotions rather than with our intelligences.

Our lives are, indeed, shot through and through with our apparent belief in the necessity of human suffering. We seem to believe firmly in the punitive ritual, in inflicting punishment upon others and in inviting it upon ourselves. It is a curious truth that many mortals seem to enjoy suffering. Were that not true there would be no martyrs, and there might be also no high endeavors. But civilization is cunning and resourceful and often hypocritical in its utilization of punishment. We punish our children, and in making them suffer we inflict suffering also upon ourselves. We make generous use of punishment in our schools by our system of promotions and rewards and demerits. And government of all kinds and all the courts would think themselves unable to function if deprived of the power to inflict punishment. We scarcely ever receive even a communication from any unit of government that is not accompanied by a threat. The subpoena by which we are often brought into court carries in the very word the suggestion of punishment. And the pulpit would be helpless, I fear, without an associated Hell and a condemning God. We physicians often unwittingly mete out punishment by our advice or threats which deprive or restrain. Warfare is punishment on a grand scale.

We are enormous energy systems. We are constantly elaborating energy. What we do with it makes us or mars us, and helps or hurts the social set-up around us. One individual may easily and intelligently turn his energy outward—the extrovert. Another may make his adventures within himself—the introvert. And the same individual may be at one time extro- and at another time intro. We are curious creatures. But in what spirit the energy be directed is as important as in what direction it be sent. If the energy be directed outward in hostility, there may be theft or assault or homicide or warfare. And if the in-turned energy be malevolently guided there may be unhappy and uncomfortable thought of self, or mutilations or suicide. One of the most important things in life is not only to elaborate physical and mental energy, but to find wholesome outlets for it.

We make use of too much energy in punishing ourselves and in punishing others. Melancholia represents practically the infliction of emotional and spiritual assault of the individual upon self; homicide represents fatal assault upon another. The two acts differ largely in the motivation back of the driv-

ing force. The suicidal person is even more anti-social than the homicidal individual. And one may be as helpless as the other. The melancholiac resists recovery, because recovery would thwart self-punishment, and result in failure of purpose. Not all sick persons are anxious or even willing to recover. Pain and pleasure may not be always antithetical states. Certain morbidly constituted individuals apparently derive much satisfaction from suffering; therefore they cannot afford to recover. And not infrequently emotional energy turned inward may manifest itself by transformation into physical discomfort, the nature and the cause of which the patient may not understand. Only psychological understanding can help such patients. Surgery and medication hurt them. Accusations against one's moral self may often be unconsciously concealed behind a physical complaint.

We ourselves constitute an ever-present and boundless field for exploration and analysis. The

more thoroughly we understand ourselves the more comfortably we can live with ourselves and with others. And the more we know of self the more will we know also of others. For it must be true that we are all much more alike than unlike. That thought should give us charitableness and encourage us to seek to do justice to others and to demand it for ourselves.

And in concluding my discursive peregrinations in the world of the unseen may I express the hope that we may think of that world as inhabited by more diseases and more complicated and more fearsome afflictions than those that cause disarrangement of the physical and physiological features of our earthly tabernacles? For the larger and the better part of man cannot be seen nor felt nor weighed nor measured. But man the unseen and the impalpable also belongs to medicine. Let us remember that always, and have all of him always in our keeping and in our prayers.

TREATMENT OF BURNS.*

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For the past twenty-five years we have served an industrial plant many of whose employees are constantly exposed to the hazard of burns of various kinds and degrees. A severe burn creates an emergency that demands immediate action. The skill and patience exercised during the first forty-eight hours of such an injury frequently decides the fate of the patient. In spite of all our recent progress, and after we have exhausted every resource at our command, we have no assurance the victim will not fall prey to infection, absorption and toxemia. When this occurs, we are relegated to the side lines and forced to stand by and root for mother nature, while she solves the major part of the problem.

Death from extensive burns is generally due to shock, exhaustion, or toxemia. The first two of these are combated by general measures—morphine for pain, and for extreme blood concentration following severe burns the administration of large amounts of fluids, 5 per cent glucose by vein, given at a temperature of 105° F. If this solution is given in

saline, better results are obtained as the blood chlorides rapidly decrease following burns, and this procedure assists in maintaining a normal chloride level. Fifteen units of insulin to each 1000 c. c. facilitates utilization of the glucose. Water should be given freely by mouth when possible, or proctoclysis and hypodermoclysis when indicated.

Having the patient's general condition safely guarded, our next thought is the prevention of infection and toxemia. For first, and mild second degree burns involving small areas, we use butesin picrate ointment. This substance combines the anæsthetic properties of butesin with the antiseptic properties of picric acid, and is an excellent remedy.

It is the more severe and extensive burns that tax all our resources.

Probably the greatest single advance in the treatment of burns was developed by Davidson, of Detroit. I refer to the tannic acid treatment. It is a generally accepted fact that late death from burns is due to absorption of toxic products from the burned area. Here tannic acid seems to have played a stellar role. The burned area should be thoroughly

*Presented in the Round Table Discussion on Minor Surgery at the sixty-eighth annual session of the Medical Society of Virginia in Roanoke, October 13, 1937.

cleansed with green soap, ether or peroxide, gas anæsthesia frequently being necessary. Having cleaned up all possible sources of infection, the field is sprayed from an atomizer with a $2\frac{1}{2}$ or 3 per cent solution of tannic acid. The area is sprayed at thirty-minute intervals until the surface is covered with a mahogany crust. Extensive burns are usually coagulated in sixteen to twenty hours. During and after complete tanning, the affected parts are exposed to the air by being placed under a cradle covered with sterile linen, and equipped with electric light bulbs. Some prefer to apply the tannic acid on gauze pads instead of spraying; this is a matter of choice. Should areas of tenderness appear under the crust, or a rise of temperature indicate infection, the usual surgical procedures are indicated. The crust should be softened with wet dressings of boric acid solution, and the wound freely drained. By this method the severe toxemia formerly observed in extensive burns is greatly lessened, infection more frequently prevented, and pain almost completely eliminated.

Recently we have been using a 2 per cent solution of gentian violet. We are very much pleased with results, and feel that it has some advantages over other remedies we have used. The solution can be prepared and kept in a container for instant use. It has the advantage of being sterile at all times and reacts with the burned flesh to form a thin, light eschar, tough but flexible. Because of its antiseptic properties, the patient may be spared the pain of cleaning the surface involved, unless the parts should be covered with oil, grease, etc. We use an atomizer and spray the affected parts every two hours until

a thin eschar is formed, then three or four times daily; any blisters formed are opened and the unstained portions sprayed. If the burn is deep and extensive, the eschar should remain for about three weeks, when it can be softened by a sterile salt solution and removed. Normal saline dressings are applied until the wound is clean, when a skin graft will hasten recovery.

Burns from caustic soda and lime present a special problem. Cauterization by caustic soda or lime continues until the chemical is absorbed, chemically unites with tissue elements or is removed by neutralization. First aid is extremely important in these cases. Containers of 5 per cent acetic, and saturated solutions of boric acid are kept in close proximity to the employees, and they are instructed and quickly learn the importance of its instant use. Should these solutions not be convenient plain water is used freely instead. When the burned area has been thoroughly bathed in the solution the patient is rushed to the hospital, put to bed and warm wet dressings of boric acid solution continuously applied for twenty-four to forty-eight hours. This is routine treatment, even when small areas are involved. By this method patients with mild burns are frequently able to return to work the following day, thus avoiding a lost time accident. Before we began using the wet acid dressings, what would seem an innocent burn today, by chemical action, might take on serious aspect tomorrow. It is impossible to determine the degree and extent of caustic soda burns in less than one or two days. After two to four days when neutralization is complete the parts are placed under a cradle and treated as any other burn.

BIOPSY OF CERVIX UTERI.*

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There is no organ of the female, in which malignancy frequently occurs, that can be so advantageously studied as the cervix. The accessibility of the site and the ease of biopsy render the cervix especially suitable for study. In addition, the lesions

*From the Department of Surgery and Gynecology, University of Virginia School of Medicine.

Presented in the Round Table Discussion on Minor Surgery at the sixty-eighth annual session of the Medical Society of Virginia in Roanoke, October 13, 1937.

which often precede cancer of the cervix are so amenable to simple treatment that a really hopeful program of cancer prophylaxis is available. It is surprising that, after several decades of intensive study devoted to this problem, methods of diagnosis and treatment of cervical cancer are still so variable. Constituting, as these tumors do, a considerable proportion of all malignant tumors in the female (40 per

cent¹), neoplasms of the cervix occupy an important place in medicine.

Cancer of the cervix uteri in its incipency is a local process. The specific cause is not known, although it is generally accepted that chronic irritation plays an important role in its development. It is preceded by pregnancy in from 90 to 97 per cent^{2, 3, 4, 5} of cases. The opinion that cervicitis and trauma play an important role in this disease is reflected in the statements of Findley⁶, Dickinson⁷, Pemberton and Smith², and Ward⁵.

Three types of cervical carcinoma are recognized: squamous-cell carcinoma, adenocarcinoma, and a mixture of the two. By far the largest number of malignancies of the cervix arise from the squamous cells at the mucocutaneous junction. Adenocarcinoma accounts for approximately 5 per cent of cervical carcinoma. The mixed variety is so rare that the percentage of incidence is not available.

Hansemann⁸ was first to associate the degree of malignancy with the histologic picture, introducing the term, anaplasia. Ewing⁹ and Broders¹⁰ emphasize the same relationship. Norris¹¹ believes that the mitosis rate is the most important factor in determining the degree of malignancy.

The diagnosis of cervical carcinoma seldom offers any difficulty, since the disease is usually well-advanced when first seen and can be diagnosed clinically in a majority of the cases. Pemberton and Smith² found that 97.7 per cent of their cases were diagnosed correctly clinically. Other figures on the ability to diagnose the lesion from the gross appearance range from 95 to 98 per cent. The usual textbook description is that of crater ulcer, cauliflower growth, foul odor, and hemorrhage. This is, of course, the late picture on which clinical diagnosis can be based. The physician should familiarize himself with the early picture also, for it is in early cases that the best results are to be obtained.

Periodic and frequent examination of women who have had children will lead to many early diagnoses. Some writers advocate periodic examination of all women between the ages of thirty-five and fifty, consisting of both inspection and palpation of the cervix. The visible changes to be looked for are deformity, scarring, erosion, ulceration, hyperemia, hemorrhage, and exudate including cervical discharge. Palpation may reveal the presence of a mass with its extent and consistency. Early carcinoma should always be suspected when erosion or ulceration is seen on inspec-

tion of the cervix. Such an appearance justifies a biopsy.

In an effort to make earlier clinical diagnoses, new methods are being evaluated in many clinics. Two of these are being widely used, the colposcopic examination of Hinselmann¹² and the iodine test of Schiller¹³. The colposcope is used to magnify the cervix under direct vision. This magnification is designed to make easier the detection of suspicious areas on the cervix. The use of this instrument has been limited because of its expense.

Schiller's iodine test is a diagnostic test only in the sense that it draws attention to a pathological area, *without excluding* a benign lesion. It is carried out as follows: The cervix is exposed and cleaned; a modified Lugol's solution† is poured into the vagina and is left for five minutes. The solution is cleaned out and the cervix is observed for staining. Unstained areas are abnormal and are always regarded as suggestive of carcinoma. The test depends on the brown staining of the glycogen in the normal epithelial cell. Ulcerated areas, erosions, scars, leukoplakia, and carcinoma are not stained by the solution. Opinion on its value in the early diagnosis of cancer of the cervix varies. Goldstine¹⁴ doubts the value of the Schiller test. Pemberton¹⁵ says he has never picked up a case of cancer by this method and is disappointed with its results. Together with clinical inspection, both the colposcope and the iodine test are used to point out areas where biopsy should be taken.

The biopsy is still the most accurate means of making a diagnosis. There are a number of methods available for obtaining a biopsy specimen. The most common technique of biopsy is the removal of tissue by means of a sharp knife, after which the edges of the wound are seared with a cautery. The removal of small bits of tissue with the cautery alone is not satisfactory, as the tissue is coagulated and becomes valueless for microscopic examination. Many clinics employ the punch to obtain biopsies. This is especially valuable in office practice and when multiple biopsies are to be obtained. There are still others who feel that all biopsies of the cervix should be taken with the high frequency electric knife. This has the advantage of sealing the lymphatics without serious injury to the specimen that is to be examined.

The possibility that biopsy may be a dangerous

†Modified Lugol's solution: iodine 1, potassium iodide 2, water 300.

procedure^{16, 17}, because of dissemination of the cancer cell, is the reason for the variations in technique. Martzloff⁴, in his review of cases from the Johns Hopkins Hospital, found no evidence that biopsy is responsible for dissemination of the disease. Ward⁵ and Goldstine¹⁴ feel that the danger of spreading the disease by biopsy is over-rated. Taylor¹⁸ has shown that manipulation does not affect the survival rate. By far the majority of gynecologists agree that the value of the biopsy far outweighs the somewhat theoretical danger.

Three precautions should be observed when removing tissue for microscopic examination. First, extreme gentleness in the handling of tissue is of prime importance. Second, excision should be made from the area under most suspicion. Third, adequate material must be obtained, including both normal and abnormal tissue. Under the third precaution, it might be added that there are many cases in which it is advisable to take multiple biopsies. It must be remembered, in the selection of a site for biopsy, that the responsibility of diagnosis is divided between the clinician and the pathologist.

The pathologist's task is from the tissue furnished him not only to diagnose cancer or to determine its absence, but also, if cancer is found to estimate the degree of malignancy on the criteria already mentioned. Thus, the clinician is furnished information valuable in prognosis and in choosing the type of treatment. The correlation between degree of malignancy and radiosensitivity is of great importance. In this connection it must be noted that many observers^{11, 19, 20, 21} lay more prognostic weight upon the clinical character and the extent of the disease than upon its microscopic appearance.

From the general point of view, the biopsy is of the utmost importance in the study of cancer. No statistics on cancer anywhere can be considered of any value unless all tumors studied have been subjected to biopsy.

From the patient's point of view the value of biopsy over any other method of diagnostic procedure is obvious. Cervical carcinoma in its incipency must be recognized by microscopic rather than by macroscopic changes, and the only safe way to rule out cancer is by means of a careful biopsy. By this method cancer can be treated early, and benign lesions can be spared radical procedures. Subject to the rarest exceptions, the statement may be made that any woman seen to have an erosion or ulcer of

the cervix that does not yield promptly to simple treatment is not receiving proper protection against death from cancer if a biopsy has not been recommended.

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INJECTION OF INTERNAL HEMORRHOIDS.*

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The injection treatment for hemorrhoids was introduced first about 1871, but for many years thereafter the method was held in great disrepute. This aversion was due largely to the fact that it was employed almost entirely by inexperienced charlatans and advertising quacks. In the early part of the present century the procedure found some favor with a few men of ability and of unquestioned ethical standing. Since that time it has grown in popularity quite rapidly, and is now employed regularly but in a discriminating manner, I believe, by every proctologist of any note the world over. The injection of hemorrhoids under any circumstance, however, is still condemned by a few. These opponents claim that it is an unscientific procedure and fraught with great danger. Such adverse criticism invariably comes from theorists who have not used it at all or from those who have employed it injudiciously, failing entirely to appreciate its limitations.

That the method has a useful and important place in properly selected cases is now conceded by all unbiased students of proctology. It is by no means a cure-all and the results obtained are more or less in direct proportion to the discretion of the operator and his ability to select for its use only those cases to which such treatment is suited. Its employment has not been advised by even its most enthusiastic advocates except in simple uncomplicated internal hemorrhoids. In these, not only relief of symptoms but complete cures will be obtained in almost every instance if a proper technic is observed. A symptomatic cure must not be mistaken for a real cure, however. Often-times bleeding and protrusion, the most frequent symptoms of internal hemorrhoids, are completely controlled by one or two injections. It is necessary to explain to the patient at his first visit that treatment must be repeated at regular intervals

of a few days until the hemorrhoids have completely disappeared, and, unless this is thoroughly understood, he most likely will discontinue his visits after obtaining relief of the symptoms.

It is useless to inject hemorrhoids which are complicated by fissures, fistulae or other pathology which requires surgical intervention. If an operation for some associated pathology has to be performed, the hemorrhoids should be excised at the same time. An exception to this rule may be made when the patient has bleeding hemorrhoids and is so greatly debilitated that an operation is not advisable. Bleeding from a hemorrhoid is usually controlled by the first injection. While, at times, circumstances necessarily will influence the choice of treatment, generally only measures which insure complete removal of all existing pathology should be employed.

Various drugs and combinations of drugs have been used in injecting hemorrhoids. Phenol in oil was employed by the originators of the treatment, and is still quite popular with many physicians. It has been used in varying strengths from 5 to 50 per cent. In recent years the weaker solution is that generally advocated. This is sufficient for all practical purposes, and is less likely to produce a sloughing which is always objectionable. For many years we have used quinine and urea hydrochloride almost exclusively, generally a 5 per cent solution, and have found it a most constantly dependable agent.

All existing internal hemorrhoids should be injected at each visit. These treatments may be repeated every three or four days or at intervals of a week or more if preferred. They must be continued until all of the hemorrhoids have disappeared, as shown by examination. A cure may then be pronounced, with little if any likelihood of a recurrence.

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*Presented in the Round Table Discussion on Minor Surgery at the sixty-eighth annual session of the Medical Society of Virginia in Roanoke, October 13, 1937.

FRACTURES OF THE FEMUR.*

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The femur is surrounded by much thicker soft parts than the other long bones of the extremities, and it is, therefore, much more difficult to get hold of and handle when broken. The large masses of muscle around it are in constant tone, day and night, and do their utmost to produce shortening, either by overriding, or by angulation at the site of the break. For this reason, the ordinary plaster cast, which works well in many leg and arm fractures, is not so apt to be satisfactory in treating broken femurs.

Before going further, allow me to digress long enough to state that broken femurs in small children offer no problem at all. It is simply a matter of moderate traction, maintained steadily for something like four to six weeks, and reasonable caution about beginning weight-bearing too soon thereafter. A million broken thigh-bones in small children have been treated by ten thousand general doctors with no special training, by simply hanging up the leg in overhead traction, and every one of them has healed completely and perfectly, with neither limp, weakness, deformity nor significant shortening. It makes no difference whether the fracture is square across or oblique or comminuted, or whether the bone is end-on or a little overlapped, the end-result is always the same—perfect. The only precaution is to keep pulling on the leg long enough to let it unite firmly, and not to let the child walk while the callus

Returning to the adult, many breaks of the thigh-bone are either oblique or comminuted, and in either case can be treated by adhesive traction as a rule. Some control is to be maintained over the alignment, remembering that the femur is not a straight bone, but has quite a little forward curve. Enough pillows should be kept under the middle of the thigh to bend it noticeably forward, otherwise the lateral X-ray will show that the bone is in reality bent backward.

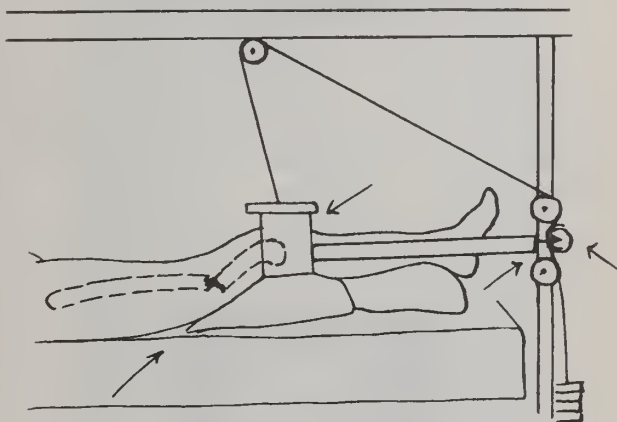


Fig. 2.—Russel traction, incorrect.

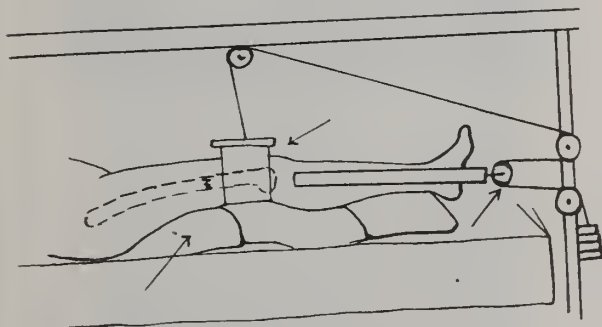


Fig. 1.—Russel traction, correct application.

is soft, because then the thigh will bend. This never need occur. In this fracture, it is actually hardly worth while to even have an X-ray.

*Read before the Seaboard Medical Association of Virginia and North Carolina at Virginia Beach, Va., December 8, 1937.

A popular method is the Russel traction, and this is quite all right if it works, which it will generally do if kept under observation. Note that the thigh is to be supported, as stated above; and the foot of the bed is to be elevated so that the weights do not make the patient slide down in bed. I see Russel tractions, ever so often, that look like a figure 2. The arrows show the sagging thigh, the knee sling too far distal, the foot-piece right against the frame, and the three pulleys all in vertical line so that no traction can possibly be acting. The correct application is shown in figure 1.

Sometimes there is a tendency to lateral displacement. If so, appropriate localized pressure can be brought to bear by using slings with lateral pull and counterpull, through pulleys at the sides of the bed. It is in such cases that an added Thomas splint gives rather more precise control than the simple Russel traction.

A variation is the use of the Kirschner wire, which can be put through under novocain, and which gives



Fig. 3.—Fractured surfaces not in contact.

excellent skeletal traction. Tongs will do, but I hear they have slipped off occasionally, and damaged the knee-joint. It is not generally necessary to use skeletal traction in any form.

Let me call attention to the position of the foot. This should not be pointing directly vertical, but



Fig. 4.—Fractured surfaces apposed under fluoroscope.

should be allowed to turn outward a little; otherwise, when the fracture is healed, the patient may find that he is pigeon-toed. This is due to the fact that the upper fragment is commonly rotated outward a little, and therefore the lower fragment is to be allowed to rotate a little to match it.

Where the fracture is displaced as in figure 3, it should be corrected under the fluoroscope, figure 4, so that broken surfaces are apposed instead of being



Fig. 5.—Poor position, no union after some months.

on opposite sides of the shaft. (This particular patient is beginning to walk, after some fourteen weeks, of which about eight were spent in traction).

When the bone is broken squarely across, overlapping means much slower union, and should generally be corrected by one means or another. It can

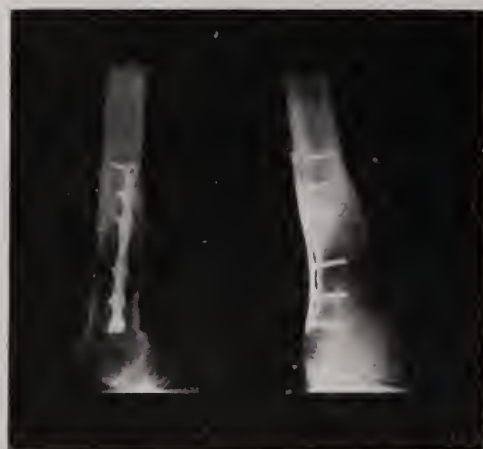


Fig. 6.—Plated, union commencing at once.

sometimes be done under the fluoroscope, the bones being put at least partly end-on. Healing in these square breaks is rather slower anyhow, because of the small amount of raw bone surface.

In clinic practice, you can get the patient out of his hospital bed and thus release it for someone else, by putting on a cast as soon as union begins—let us say four to six weeks. In private practice, it appears better to continue traction, and perhaps there is less trouble with stiffness of the knee-joint afterward. If you do use a cast, be careful to avoid angulation. In the upper part of the shaft, this



Fig. 7.—Severe fracture into knee-joint.

will be outward; in the middle and lower thirds, backward.

If position and alignment cannot be maintained by closed methods, as in figure 5, open reduction is to be done (Fig. 6). This operation should be done by good surgeons who have reasonable mechanical ability. The results are excellent, and should be practically perfect, as are those of Sherman of Pittsburgh. I strongly advise the use of the standard plates, drills and screws. Makeshifts may only serve to bring about an unnecessary and disappointing failure, and to bring discredit upon what should be a precise and most efficient procedure.

The plate should be large enough to hold the fracture



Fig. 8.—Corrected position, plated.

firmly and steadily, some at least of the screws ought to go clear through the bone, and the bone should be held firmly during fixation. The skin is to be com-

pletely blocked off, and dead space is to be avoided in closing—which is done without drainage. Good technique is imperative; Lane technique is desirable.

Open reduction and fixation are needed for best and quickest results in something like fifteen or maybe 20 per cent of cases. This is true of some shaft fractures, and more especially true of fractures at the lower end of the bone, involving the condyles. I illustrate such a case in figures 7 and 8, in which the result would have certainly been a stiff knee with a good deal of disability if treated by closed methods. The next illustration (Fig. 9)



Fig. 9.—Knee at right angles; complete return of function.

shows the patient after ten months. She had long since resumed all her duties as a chambermaid, running up and down stairs all day long.

Please note that I speak of specific details in regard to the types of fracture and the sort of displacement that has to be overcome. The X-ray is essential in these cases; and during traction in bed the portable machine should be used often enough to be sure that position is being maintained.

I have purposely left untouched the problem of the fracture of the neck of the femur. In brief, the extracapsular fracture will mostly heal with simple traction, paying attention to rotation of the foot, which should be, as above noted, slightly outward. Russel traction is entirely all right. But the intracapsular fracture, which involves the small part of the neck of the femur, is an entirely different problem, requiring very expert attention; and may I say that experts are not yet agreed. They are tending to

adopt the methods of Smith-Petersen and others, using internal fixation with pins, nails, or screws.

In summary, the majority of fractures of the femur can be handled by skin traction, either Buck's extension or the Russel traction, with or without a Thomas splint; but it is necessary to have a pretty good idea of just how the fracture-line runs, and

where the ends of the bone are, and this can only be done with any sort of precision by the portable bedside X-ray. Skeletal traction may be required; sometimes it is much the best practice to go ahead and plate. Fractures of the small part of the femoral neck are in a difficult class by themselves.

712 Botetourt Street.

THE PROGNOSTIC SIGNIFICANCE OF QRS CHANGES IN ACUTE CORONARY THROMBOSIS.*

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and

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The clinical manifestations of acute coronary thrombosis are not difficult to recognize, and when associated with typical electrocardiographic patterns, the diagnosis is beyond reasonable doubt. The life expectancy of any individual after a coronary occlusion cannot be definitely predicted because of the many factors involved, such as the extent of myocardial infarction, age, frequency of attacks, environment and associated complications. Low voltage and distortion of the QRS complex have been considered evidences of serious heart damage by Hepburn and Jamieson,¹ Sprague and White,² Parkinson and Bedford,³ Oppenheimer and Rothschild,⁴ Steuer,⁵ Graybiel and Sprague,⁶ Sampson and Nagle.⁷ These changes have been described as occurring in the terminal stages of myocardial disease. It would seem logical to assume that if a patient developed an acute coronary thrombosis and tracings revealed a low voltage and/or QRS complex changes, added electrocardiographic criteria as to prognosis would be available.

The purpose of this study is to review sixteen cases of acute coronary thrombosis and demonstrate that, within certain limitations, the early appearance or absence of these changes in serial electrocardiographic tracings will aid in predicting subsequent recovery, invalidism, or death. Obviously, another occlusion, intercurrent disease, intramural thrombi, emboli, or a ruptured myocardium, would invalidate our assumptions. These cases were selected because their clinical syndromes and electrocardiograms were typical of acute coronary thrombosis.

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GROUP I—PATIENTS IMPROVING AND LEAVING HOSPITAL

Case I.—L. M., a colored female, age fifty-nine, admitted to the hospital on September 3, 1935, with the diagnosis of thyrotoxicosis and hypertension. Eight days after admission, she was suddenly overcome with an agonizing pain, radiating to the left shoulder and left arm. During the attack, the pulse rate was rapid and the temperature was subnormal. The white blood count was 9,000, with sixty-eight polymorphonuclear neutrophils, thirty-one lymphocytes, and one myelocyte. Following the attack, the patient's temperature rose to 101°. There was gradual improvement and two months later a total thyroidectomy was performed. She was discharged from the hospital a month later and at the time had developed evidences of myxedema. The patient refused further treatment but was examined again nine months later. She had discontinued taking thyroid and was definitely myxedematous. This patient was still living two years after the initial heart attack. Figure I reveals interval electrocardiograms.

Case II. S. H., a white male, age sixty-two, admitted to the hospital on June 9, 1934, after having been overcome by an acute attack of substernal pain. On admission the patient was orthopneic and cyanotic. The pulse was rapid, the temperature was subnormal, and the blood pressure was 90/60. The white blood count was 16,400, with seventy-six polymorphonuclear neutrophils, twenty lymphocytes, and three myelocytes. For several days after the attack, the temperature was elevated to 102°, gradually subsiding to normal. There was no recurrence

of heart pain and the patient was discharged twenty-one days after the initial attack. He was still living three years after the initial attack. Figure II reveals interval electrocardiograms.

Case III.—Dr. I. B., a white male age fifty-five, admitted to the hospital on January 8, 1936. This patient had a severe heart attack one month before admission and, since that time, had developed similar attacks of pain. During the attacks the pulse would be rapid and the blood pressure would fall to 100/60. After these episodes, the temperature would rise to 101° and the blood pressure would return to 140/80. The white blood count during the attacks varied from 14,000 to 15,000, with eighty-seven polymorphonuclear neutrophils, ten lymphocytes, two monocytes, and one myelocyte. This patient developed mild congestive failure while in the hospital. He responded very well to treatment and was discharged forty-nine days after admission. He was still living one year and a half after the initial attack. Figure III reveals interval electrocardiograms.

Case IV.—F. G., a colored male, age forty-five, admitted to the hospital on July 12, 1934. The day before admission he had been overcome by an attack of severe substernal pain, radiating to the shoulders and down both arms. On admission the patient was moderately breathless, the pulse was rapid, and the blood pressure 94/70. The temperature was 100° and the white blood count was 12,400, with fifty-six polymorphonuclear neutrophils, forty lymphocytes, and four monocytes. There were no further attacks and the patient was discharged seventeen days after admission. He was still living three years after the initial attack. Figure IV reveals interval electrocardiograms.

Case V.—L. N., a white male, age forty-two, admitted to the hospital on July 9, 1934. Two days before admission he had been overcome with a severe attack of chest pain, radiating to the shoulders and down both arms. On admission the patient was moderately cyanotic, the blood pressure was 130/70, the temperature was 99.6°, and the white blood count was 13,600, with seventy-four polymorphonuclear neutrophils and twenty-six lymphocytes. The patient did not have a recurrence of the chest pain and was discharged twenty days after admission. The patient was still living three years after the initial attack. Figure V reveals interval electrocardiograms.

Case VI.—J. H., a white male, age fifty-three, ad-

mitted to the hospital on August 20, 1935, one hour after having been overcome by severe precordial pain, radiating to his left shoulder and down the left arm. On admission the patient was covered with perspiration. The blood pressure was 90/50, the pulse rate was 110, the temperature was subnormal, and the white blood count was 9,800, with eighty-one polymorphonuclear neutrophils, one basophil, and eighteen lymphocytes. The following day the temperature was 100°. There was no recurrence of pain and the patient was discharged twenty days after admission. He was still living eighteen months after the initial attack. Figure VI reveals interval electrocardiograms.

Case VII.—W. W., a white male, age fifty-one, admitted to the hospital on August 6, 1935, complaining of ulceration and gangrene of both legs. He had been incapacitated on account of frequent attacks of chest pain for the past six months. A week before admission, after a very prolonged attack, he developed pain in the pubic region, with coldness and numbness of both legs. Gangrene developed very quickly afterwards. On admission the significant findings were the gangrenous lower extremities. The white blood count was 20,050, with sixty-nine polymorphonuclear neutrophils, thirty lymphocytes, and one monocyte. As this case appeared hopeless, he was discharged seven days after admission. He lived for two months afterwards, finally dying of generalized septicemia. Figure VII reveals interval electrocardiograms.

Case VIII.—F. O., a colored male, age thirty-eight, admitted to the hospital on December 14, 1935, after having been overcome by a severe attack of precordial pain, radiating to the shoulders and down both arms. He was brought to the hospital in a condition of circulatory collapse, covered with perspiration, a rapid pulse, a blood pressure of 90/70, and a subnormal temperature. The temperature rose to 100° the following day. The white blood count was 11,550, with seventy-two polymorphonuclear neutrophils, one eosinophil, one basophil, and twenty-six lymphocytes. There was no recurrence of pain. The patient gradually improved and was discharged twenty-nine days after admission. He was still living sixteen months after the initial attack. Figure VIII reveals interval electrocardiograms.

Case IX.—E. P., a white male, age forty-six, admitted to the hospital on March 11, 1936. Two days

GROUP I

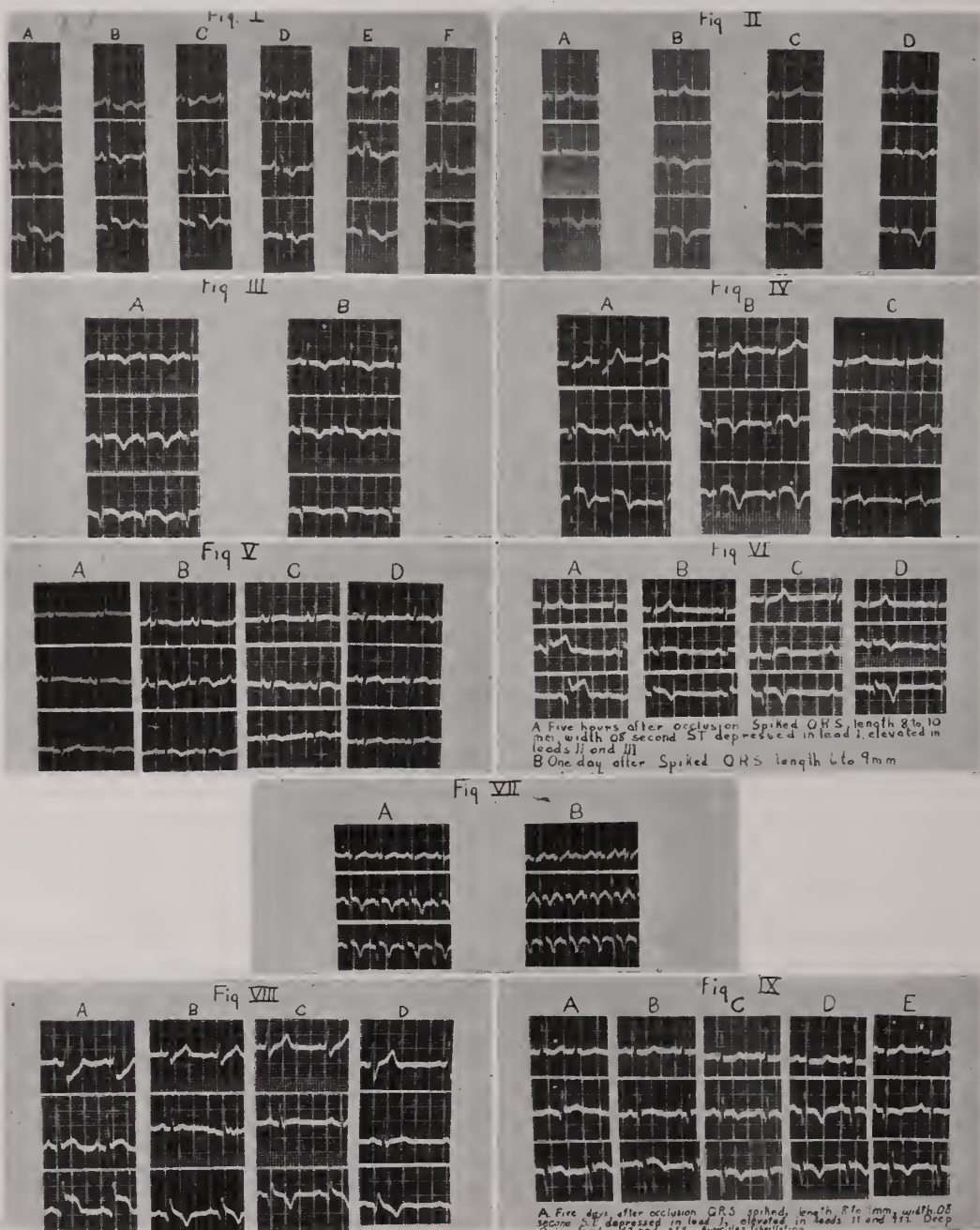


Figure I.—A—Two hours after occlusion. Lead I, Q. R. S., spiked, length 12 to 21 mm., width .08 second. Lead II, S. T. elevated above isoelectric line. Lead III, S. T. elevated deep Q. B—One day after occlusion. C—Two days after occlusion. Spiked Q. R. S. with notching in lead II, 11 to 19 mm., .08 second. D—Thirteen days after occlusion. E—Spiked Q. R. S. with notching in lead II. Nine to 13 mm., .08 second. Thirty-one days after. F—Spiked Q. R. S. with slurring in lead II. Eight to 15 mm. Sixty days after.

Figure II.—A—One day after occlusion Q. R. S. spiked, length 6 to 14 mm., with .06 to .08 second. S. T. elevated in leads II and III. Deep Q wave in leads II and III. B and C—Two and four days after occlusion. Q. R. S. spiked length 6 to 11 mm., width .06 to .08 second. D—Twenty-one days after occlusion. Q. R. S. spiked length 6 to 10 mm., width .06 to .08 second.

Figure III.—A—One month after occlusion. Spiked Q. R. S., length 6 to 8 mm., width .06 second. S. T. elevated in leads I,

II, and III. B—Two months and three days after occlusion. Spiked Q. R. S., length 6 to 8 mm., width .08 second.

Figure IV.—A—One day after occlusion. Auricular fibrillation with occasional ventricular premature contractions. Spiked Q. R. S., length 6 to 10 mm., width .08 second. S. T. depressed in lead I, elevated in leads II and III. B—Two days after occlusion. Occasional auricular extrasystole. Spiked Q. R. S., length 6 to 10 mm., width .08 second. C—Six days after. Sinus rhythm. Q. R. S. spiked 6 to 10 mm., .08 second.

Figure V.—A—Two days after occlusion. Spiked Q. R. S., length 6 to 9 mm., width .06 second. S. T. elevated in leads I and II. B—Three days after occlusion. C—Five days after occlusion. Spiked Q. R. S., length 6 to 8 mm., width .06 second. S. T. elevated in leads I, II, and III. D—One month and eleven days after occlusion. Spiked Q. R. S., length 6 to 9 mm., width .06 second. S. T. elevated in leads I and II.

Figure VI.—A—Five hours after occlusion. Spiked Q. R. S.,

length 8 to 10 mm., width .08 second. S. T. depressed in lead I, elevated in leads II and III. B—One day after. Spiked Q. R. S., length 6 to 9 mm., width .08 second. C—Four days after occlusion. D—Nine days after occlusion. Spiked Q. R. S., length 6 to 7 mm., width .06 second.

Figure VII.—A—Six months after occlusion. Spiked Q. R. S. with slight notching in lead II, length 7 to 10 mm., width .06 second. S. T. depressed in lead I, elevated in leads II and III. Sinus tachycardia. B—Six months and three days after occlusion. No change.

Figure VIII.—A—One and one-half hours after occlusion. Spiked Q. R. S., length 12 to 14 mm., width .08 second. S. T. depressed in lead I, elevated in leads II and III. B—Four days after occlusion. Spiked Q. R. S. in leads I and II, slurred in lead III, length 7 to 10 mm., width .08 second. C—Nineteen days after occlusion.

prior to admission, he was overcome with a severe chest pain. Apparently this was an acute coronary thrombosis, although it was complicated by a concurrent pulmonary infection. After admission, the patient was critically ill for two weeks with his lung infection. During this period, the white blood count was 10,600, with sixty-eight polymorphonuclear neutrophils and thirty-two lymphocytes. The blood pressure was 115/60. The patient gradually improved and was discharged twenty-eight days after admission. Since then he developed frequent attacks of precordial pain but has continued to work and is still living, one year after the initial attack. Figure IX reveals interval electrocardiograms.

GROUP I—COMMENT

It will be noted that the cases in this group revealed the typical electrocardiographic tracings of

Spiked Q. R. S. in leads I and II, slurred in lead III, length 6 to 10 mm., width .08 second. D—Eight and one-half months after occlusion. Spiked Q. R. S. in leads I and II, slurred in lead III, length 6 to 10 mm., width .08 second.

Figure IX.—A—Five days after occlusion. Q. R. S. spiked, length 8 to 9 mm., width .08 second. S. T. depressed in lead I, elevated in leads II and III. Deep Q in leads II and III. Auricular fibrillation. B—Seven days after occlusion. Q. R. S. spiked, length 8 to 10 mm., width .08 second. Regular sinus rhythm. C and D—Thirteen and twenty-three days after occlusion. Q. R. S. spiked, length 7 to 11 mm., width .08 second. E—Six months, eleven days, after occlusion. Q. R. S. spiked, length 10 to 12 mm., width .08 second. S. T. elevation lessened in leads II and III. Deep Q in leads II and III.

acute coronary occlusion. Case IV was the only one in this group that developed an arrhythmia. There was an occasional notching of the QRS complex but the normal spiked contour of the QRS complex was evident in all of the tracings. The lowest voltage of the QRS was six millimeters and the highest voltage was twenty-one millimeters. The average height of QRS was eight to nine millimeters. In the entire group there was very little evidence of abnormal widening or slurring of QRS, the average width being .08 seconds. The death of Case VII cannot be attributed to coronary vessel damage as he succumbed from a secondary infection.

GROUP II—PATIENTS NOT IMPROVING AND SUC- CUMBING IN HOSPITAL

Case X.—R. H., a white male, age sixty-seven, admitted to the hospital on June 19, 1936, after hav-

Group II

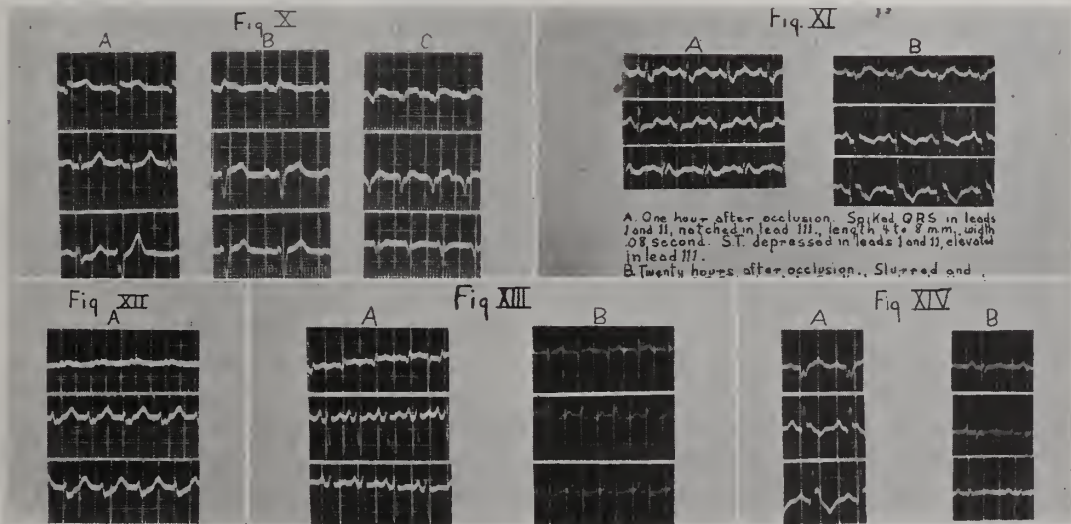


Figure X.—A—One hour after occlusion. Slurred Q. R. S. in lead I, spiked in lead II, notched in lead III, length 5 to 6 mm., width .06 second. S. T. elevated in lead I, depressed in lead III. Occasional ventricular extrasystole. B—Two days after occlusion. Slurred Q. R. S. in lead I, widening in leads I, II, and III. Length 4 to 9 mm., width .10 second. P. R. 20. C—Seven days after occlusion. Slurred, notched Q. R. S. in leads I, II, and III. Length 4 to 5 mm., width .12 second.

Figure XI.—A—One hour after occlusion. Spiked Q. R. S. in leads I and II, notched in lead III, length 4 to 8 mm., width .08 second. S. T. depressed in leads I and II, elevated in lead III. B—Twenty hours after occlusion. Slurred and notched Q. R. S. in lead I. Spiked in leads II and III, length 4 to 15 mm., width .08 second. S. T. depressed in lead I, elevated in leads II and III.

Figure XII.—A—Six hours after occlusion. Slurred Q. R. S., length 3 to 6 mm., width .12 second. S. T. elevated in lead I, depressed in leads II and III. Nodal rhythm.

Figure XIII.—A—Five days after occlusion. Slurred Q. R. S. in lead I, spiked in leads II and III. Length 4 to 10 mm., width .08 second. S. T. elevated in lead I, slightly depressed in lead III. B—Seven days after occlusion. Spiked Q. R. S. in leads I, II, and III, length 5 to 13 mm. S. T. elevated in lead I, slightly depressed in lead III.

Figure XIV.—A—Two days after occlusion. Slurred and notched Q. R. S. in lead I, spiked in leads II and III. Length 4 to 9 mm., width .08 second. S. T. elevated in leads I, II, and III. B—Ten days after occlusion. Q. R. S. spiked in lead I, notched in leads II and III. Length 4 to 5 mm., width .08 second.

ing developed an acute attack of sub-sternal pain, radiating to the left neck. On admission the patient was orthopneic, moderately cyanotic and cold. The blood pressure was 80/60, the pulse was 100 and the temperature was sub-normal. The heart sounds were distant. The white blood count was 12,100, with seventy-nine polymorphonuclear neutrophils, eight monocytes and thirteen lymphocytes. The patient did not improve, remained in a semi-shocked state and died on June 27, 1936, eight days after admission. Figure X reveals interval electrocardiograms.

Case XI.—J. W., a white male, age sixty-eight, admitted to the hospital on September 18, 1936, after having been overcome with a sudden pain in his left chest, radiating to the left shoulder and down the inner aspect of his left arm. On admission the patient was dyspneic and cyanotic, the neck veins were distended and the skin was cold and clammy. The blood pressure was 80/60, the pulse rate was 120 and the temperature was sub-normal. The white blood count was 10,300, with eighty-one polymorphonuclear neutrophils and nineteen lymphocytes. The patient lapsed into a semi-conscious state and died five hours after admission. Figure XI reveals the electrocardiogram in this case.

Case XII.—F. B., a white male, age sixty-nine, admitted to the hospital on April 19, 1936. He had been overcome with a sudden severe sub-sternal pain, radiating to the sides of the neck, associated with shortness of breath and a sense of suffocation. On admission the patient was orthopneic and cyanotic. The skin was cold and clammy and he was in a semi-stupor. The blood pressure and pulse were not obtainable and the heart sounds were distant. The patient did not regain consciousness and died one hour after admission.

Autopsy: Heart—weight 550 grams, multiple old and recent myocardial scars, some of them still showing active proliferation of fibroblasts and iron pigmented scavenger cells, severe coronary sclerosis with occlusion of both coronary arteries and a recent thrombosis of the left coronary artery.

Figure XII reveals the electrocardiogram in this case.

Case XIII.—T. S., a colored male, age forty-one, admitted to the hospital on May 5, 1935, after having suddenly developed severe precordial pain, radiating to his left shoulder and down his left arm. On admission the patient was orthopneic and cyanotic,

the blood pressure was 190/130, the pulse rate was 160 and the temperature was 100. The white blood count was 11,700, with seventy-five polymorphonuclear neutrophils and twenty-five lymphocytes. The patient did not improve and gradually lapsed into a semi-comatose state. He died on May 13, 1935, eight days after admission. Figure XIII reveals interval electrocardiograms.

Case XIV.—T. S., a white male, age fifty-six, admitted to the hospital on March 14, 1935, after having been overcome with a severe sub-sternal pain, radiating to the shoulders and arms. On admission the patient was moderately dyspneic, the pulse rate was 110, the temperature was 100.8° and the blood pressure was 100/65. The white blood count was 19,200, with eighty-four polymorphonuclear neutrophils, two myelocytes and fourteen lymphocytes. The patient continued to have pain which was partially relieved by morphine, he developed a severe cough, expectorating blood-tinged sputum, and, lapsing into an irrational semi-comatose state, died on March 23, 1935, nine days after admission. Figure XIV reveals interval electrocardiograms.

GROUP II—COMMENT

It will be noted that the electrocardiographic tracings of all of these cases revealed evidences of recent coronary occlusion. The heart rates varied from 90 to 150. Case X developed frequent ventricular extra-systoles and Case XII developed a nodal rhythm. The QRS complex was notched or slurred in one or more leads in every case. The voltage of QRS was five millimeters or less in one or more leads of each case. The width of QRS was definitely abnormal in four of the five cases; this was evident primarily in Lead I.

GROUP III—PATIENTS NOT IMPROVING AND LEAVING HOSPITAL

Case XV.—S. D., a white male, age sixty, admitted to the hospital on July 10, 1933, after having developed a severe, agonizing pain, radiating over his entire anterior chest and down his left arm. On admission the patient was moderately cyanotic and dyspneic. The blood pressure was 130/70, the pulse rate was eighty and the temperature was 101°. The heart sounds were distant and there was no arrhythmia. The white blood count was 10,750, with eighty-two polymorphonuclear neutrophils and eighteen lymphocytes. The patient remained in the hospital for two months, showing very little im-

provement, and during this period had another severe heart attack, followed by congestive heart failure. The patient was readmitted to the hospital in 1934, 1935, and 1936, in severe congestive heart failure and he finally died in April, 1936.

Autopsy: Heart—weight 410 grams, marked scarring, particularly in subendocardial region, thickened endocardium and mural thrombus. Severe coronary sclerosis with diffuse scarring of the myocardium and aneurysm of the left ventricle.

Figure XV reveals interval electrocardiograms.

Group III

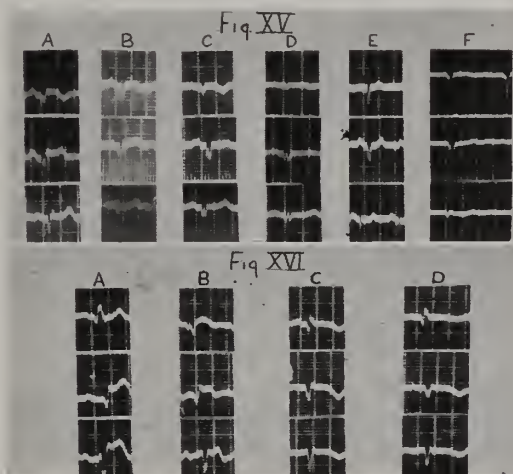


Figure XV.—A—Twenty-four hours after occlusion. Notched Q. R. S., length 5 to 8 mm., width .12 second. S. T. elevated in I and II. B—Seventeen days after occlusion. Notched Q. R. S., length 5 to 6 mm., width .10 second. C—One month after occlusion. Notched Q. R. S., length 3 to 6 mm., width .10 second. D—Four and one-half months after occlusion. Notched and slurred Q. R. S., length 2 to 3 mm., width .15 second. E—Fifteen months after occlusion. Q. R. S. inverted in all leads. L-6, W-.08. F—Twenty-eight months. Auricular fibrillation. Q. R. S. notched, inverted. L2-6.

Figure XVI.—A—Four hours after occlusion. Slurred Q. R. S. Length 6 to 10 mm., width .10 second. S. T. elevated in leads II and III. B—Seven days after occlusion. Slurred Q. R. S., length 5 to 7 mm., width .08 second. Frequent ventricular extrasystole. C—Twenty-one days after occlusion. Slurred Q. R. S., length 5 to 7 mm., width .10 second. Deep Q in all leads. D—Fifty days after occlusion. Notched and slurred Q. R. S., length 4 to 5 mm., width .10 second. Deep Q in all leads.

Case XVI.—W. E., a white male, age sixty-eight, admitted to the hospital on November 27, 1936, after having suddenly developed a severe precordial pain, radiating to both shoulders and down the arms. On admission the patient was moderately breathless and slightly cyanotic. The temperature was subnormal, the pulse rate was eighty-two and the blood pressure was 140/80. The heart sounds were distant. The white blood count was 12,800, with eighty-eight polymorphonuclear neutrophils and twelve lymphocytes. The patient did not have any further attacks of pain but developed severe con-

gestive failure. He was discharged on February 10, 1937, seventy-five days after admission, but at this time was a semi-invalid and was sent to a convalescent home. Figure XVI reveals interval electrocardiograms.

GROUP III—COMMENT

In these two cases the electrocardiographic tracings were conclusive of recent coronary occlusion. Both of these patients remained in the hospital over a long period of time and many serial electrocardiograms were taken. Case XV developed auricular fibrillation at intervals and Case XVI frequent ventricular extra-systoles. The QRS complex was notched or slurred in every tracing and the voltage was five millimeters or less in one or more leads of every tracing. There was definite widening of the QRS in most of the tracings. Both of these patients developed congestive heart failure and neither ever completely recovered. The least exertion would produce severe decompensation requiring months of bed rest.

DISCUSSION

After the occurrence of a coronary thrombosis severe enough to produce the changes noted in the electrocardiograms of these cases, it could be assumed that these individuals had severe heart damage; but it is also well known that patients with coronary occlusion may recover sufficiently to carry on their daily routine for many years after the initial attack. In 1919, Robinson⁸ theorized that there could be a functional fatigue of the conduction mechanism which would produce prolonged QRS complexes with notching and, if there was improvement, that this phenomenon would disappear; but Oppenheimer and Rothschild⁴ considered that prolongation of the QRS group and notching of the R waves with low voltage was definite indication of defective conduction through the finer branches of the ventricular conducting system and that this defect was permanent. Sampson and Nagle⁷ statistically proved that three out of every four patients developing such changes succumbed within a year after their discovery. Hepburn and Jamieson,¹ Sprague and White,² and Steuer,⁵ believe that constant low voltage in electrocardiograms is a very severe prognostic sign. As these changes apparently signify a serious prognosis whenever they are discovered, their appearance in tracings of individuals with acute

coronary thrombosis should be an additional deciding factor as to the future status of the patient.

It has been shown in the preceding cases that, if a patient develops an acute coronary thrombosis but the electrocardiogram reveals a spiked QRS with no appreciable widening and above five millimeters in voltage, his chances of recovery from this attack are excellent. If, on the other hand, the electrocardiogram reveals a notched or slurred QRS and/or a voltage of five millimeters or less in one or more leads, the patient will probably succumb, or, if he does recover, will have irreparable heart damage.

It is realized that serial electrocardiograms are difficult to obtain, even with the patient in the hospital, but it would seem from this study that they are of definite value after acute attacks of coronary thrombosis. To consider these findings as absolute prognostic phenomena would be absurd, but their influence as additional prognostic data should not be disregarded.

CONCLUSIONS

Sixteen cases of acute coronary thrombosis with serial electrocardiograms are presented.

Changes in the contour of the QRS complex and low voltage have a distinct bearing on prognosis in acute coronary thrombosis.

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LYMPHOPATHIA VENEREA (LYMPHOGRANULOMA INGUINALE).*

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Lymphogranuloma inguinale, or lymphopathia venerea as has been suggested¹ to distinguish it from the entirely distinct clinical entities of granuloma inguinale and lymphogranulomatosis cutis (Hodgkin's disease), is a disease entity characterized by inflammation of the inguinal lymph glands preceded by a primary genital lesion. Late manifestations, particularly in women, are frequently presented as a genito-anorectal syndrome, which will be further discussed.

The specific etiological agent has been demonstrated^{2, 3, 4, 5} as a filterable virus, inactivated⁵ by temperatures of 55° C. (131° F.) for thirty minutes, or exposure to ultra-violet rays for a like time. Formalin in concentrations of 1:1000 is also effective. This virus has been recovered⁵ from the primary lesion, pus in buboes, the chronic lesions of the genito-anorectal regions, and from the spinal fluid

in acute cases.⁶ It has not been transmitted experimentally by means of blood or saliva from infected humans.⁵ Likewise, no cases have been reported in children. The route of infection in man is undoubtedly in most cases the genital tract. It is a common infection among prostitutes of this country and native women of tropical and subtropical countries, its spread being favored by the usually mild and hardly noticeable acute stage in the female.

The disease first manifests⁷ itself in from four days to four weeks after exposure by a primary lesion that is *painless* and which may be transitory and unnoticed. We recently saw a small herpetic lesion on the dorsum of the penis, discovered accidentally by the patient, entirely heal with no scar in three days while under observation as a possible primary luetic lesion. Ten days later he presented himself with a bilateral inguinal adenitis that was very painful. A Frei test done several weeks later was strongly positive.

*Read before the Guilford County Medical Society, at Greensboro, N. C., November 4, 1937.

The *painless* primary lesion, which may be a papule or herpetic process forming a shallow cutaneous ulcer, is usually located on the glans penis or coronal sulcus in the male, and may be found on the vulva in the female but is usually hidden in the vagina or on the cervix. After an interval of from a few days to a few weeks, usually a week or ten days, the satellite lymph glands which drain the primary lesion become involved and very *painful*. In the male and in the female, when the primary lesion occurs on the mons or upper part of the vulva, the sub-inguinal lymphatics are most commonly involved and these patients present the typical bilateral painful bubo. Most men are seen at this stage, while it is unusual to find such a picture in women, for, as formerly stated the majority have the initial lesion in the vagina or on the cervix, drained by the pelvic lymphatics, and usually complain of nothing more than general malaise that goes untreated. However, the constitutional symptoms may be severe and require treatment but are most frequently mistreated as influenza. These are the cases dangerous to the public health and serve to perpetuate the disease.

The buboes suppurate and contain thick, yellow-green pus that is usually free of other organisms. It is at this stage that constitutional symptoms frequently appear, which may be very variable. Fever up to 100° F., or higher, accompanied by chills, weakness, loss of appetite, profuse night sweats and violent headaches are most commonly found. Of equal importance is the early occurrence of headache, dull and pressing, in the upper part of forehead and radiating into both temples and eye sockets. Photophobia associated with conjunctivitis and occasional stiffness of neck have also been reported.⁶

When the primary lesion occurs in the vagina or on the cervix the lymph drainage is to the pelvis and a perirectal lymphadenitis ensues, causing esthiomene (chronic ulcerative elephantiasis of the vulva) which may progress into anorectal elephantiasis, rectal stenosis with stricture, abscess and proctitis, or pelvi-metritis with secondary rectal stricture.⁸ In many cases recto-vaginal fistulas develop from perforation of the recto-vaginal septum.

In the male an elephantiasis of the penis and scrotum can occur due to the blocking of lymph drainage in bilateral sub-inguinal adenitis⁷. Perirectal lymphadenitis with the development of the genito-anorectal syndrome is also found.

The above symptoms and pathology may heal by fibrosis and scar tissue formation, doing no further damage, but frequently, instead of fibrosing, they ulcerate, become chronic, and may so undermine the health and nutrition of the individual that a profound cachexia results, similarly seen in the terminal stage of cancer, terminating in death.⁷ Many of those who acquire this infection early in life die as a result before the age of fifty years.⁹

The diagnosis is made from the history, examination and the pathologic process encountered. The Frei test¹⁰ is probably the most useful procedure now available. This test becomes positive about two weeks after infection¹¹ and remains so for the rest of the individual's life. One-tenth (0.1) c.c. of Frei antigen¹² is injected intra-dermally on the flexor surface of the forearm and readings are not taken until forty-eight to seventy-two hours later. A positive reaction consists of a bright red, dome-shaped area not less than seventy-five one-hundredths (0.75) cm. (about 5/16 in.) or more in diameter, which has a *central* infiltrated papule, an essential part of the reaction.^{5, 7} Severe reactions are characterized by vesicular, pustular or even necrotic *central* lesions. The specificity of this test has been definitely established.¹³

Unfortunately, there is no specific treatment for this disease at the present time. The best results have been obtained by *early* complete surgical removal of infected lymph glands before abscess formation. Numerous quick cures are reported by this method.¹¹ Surgery is useless and even dangerous in the late cases of rectal strictures,¹⁴ dilatations with bougies and some chemotherapy being the treatment of choice. Antimony in the form of tartar emetic 1 per cent solution given intravenously or Fuadin intramuscularly are used in this country, while a gold solution, Solganal-B-oleosum, given in the vein, is most popular in Europe where much more research has been done on this malady. Good results in treating all types of cases except the rectal strictures have been reported¹⁴ from the use of Frei antigen as a therapeutic agent. It is given in the same manner and dose as the diagnostic test; however, it is repeated weekly for some time. Favorable results have also in some instances been obtained by use of the X-ray and intra-glandular injection of 10 per cent iodoform in glycerin every other day until improvement is noted. Treatment procedures may be conveniently listed in their order of importance and efficacy:

1. Early surgical removal of infected glands.
2. Chemotherapy—Gold salts, especially Sol-ganal-B-oleosum, antimony preparations, copper salts, 10 per cent iodoform in glycerin, Lugol's solution, and emetine.
3. Physiotherapy—X-ray, ultra-violet ray, thermo- and diathermo-therapy for chronic ulcers.
4. Frei antigen, intra- and hypo-dermal injections.

Lymphopathia venerea, or lymphogranuloma inguinale, has been shown since the advent of the Frei test to be very prevalent; it is a serious disease and every resource at our command should be used to diagnose, control, and treat a venereal infection which has a morbidity and mortality comparable in some instances to syphilis itself.

Note.—Since this paper was written, H. Levy (*Journal of Pediatrics*, 11: 812, Dec. 1937) reports ten cases of lymphopathia venerea in children, nine proven cases in girls, and one boy doubtful. Ages range from two weeks to fourteen years, with no venereal history.

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THE SURGICAL EMERGENCY.*

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The gravity of any surgical emergency that may overtake an individual may be conceded as varying widely and subject to the influence of many factors. Some of the possibilities for a prompt exit from this world of realities pass rapidly before the mental screen of the unfortunate victim, much as though a speeded-up news reel, cataloging disasters, were being run off in a theater of unreality. If the patient be unconscious, those adults of his family or friends on the scene are separately enduring that mental preview of tragic consequences which concern and anxiety can so quickly turn into panic. It is entirely natural at such times that the thoughts of all affected turn toward the closest available trained assistance.

It is generally appreciated that, in the class of human casualties which may be called surgical emergencies, prompt action and mature judgment

are regarded most highly in the public mind. The urge to at once rush the casualty to medical aid is, fortunately for the involved, many times superseded by the more sober thought which recognizes that greater safety may lie in bringing medical aid to the casualty.

Of lessons of value to be gained from war, few principles of greater soundness have been established than the importance of taking the *doctor to the patient, rather than the patient to the doctor*. That this is, of course, not always possible does not lessen its high degree of desirability as a principle; and it is in behalf of a few such principles of emergency surgery that we beg your indulgence for a moment, granting the while that, in this, we are merely presenting a review of matters of common knowledge to the profession.

Fractures are now generally regarded as surgical emergencies and the lay public has been brought to

*Read before the Northern Neck Medical Association.

this attitude partly as the result of this country's participation in the World War, but more particularly through the influence of casualty insurance companies which have followed workmen's compensation and employer's liability legislation developed during the past twenty-five years. Related legislation designed for the protection of the public riding common carriers, as well as in the interests of the traveler on our public highways, both afoot and in private vehicles, has made the citizen keenly fracture-minded—and certainly lawsuit-minded.

Modern speed and the fracture hazard need no enlargement before this body, nor is it within our province to regard, at this time, measures of a preventive nature. A casual glance at the daily papers will convince all that the incidence rate is appalling and that campaigns for the reduction of such casualties have not been attended by conspicuous success.

The Fracture Committee of The American College of Surgeons has been constantly placing more and greater emphasis on the value of prompt and efficient immobilization in all major fractures, whether they be simple or compound, and their slogan of "*Splint 'em where they lie*" is adopted by the medical services of big industry, police and fire rescue squads and the medical departments of our national defense. You will recall the significant fact in this connection, which we learned from our British Allies, that a reduction of mortality by *thirty per cent* was accomplished through the simple means alone of efficiently splinting compound fractures of the femur *at the front*.

The prevention of shock (or at least the reduction of its severity), the lessened secondary trauma to blood vessels, nerve and muscle tissue are real and practical accomplishments of adhering to this principle; and, whether the fracture be classified as major or not, the increased comfort of the patient from efficient splinting for transportation is adequate reason for an unfailing effort to improvise where equipment is limited. In relieving pain by this, as well as by the administration of morphine, we recognize that we are contributing to the prevention of shock, and it seems reasonable and logical that much may be accomplished to the same end by the local injection of novocaine, as is so well utilized in the actual reduction of fractures in many traumatic clinics at the present time. We refer to the

local introduction of two per cent novocaine solution into the unorganized blood clot at the fracture site as advocated and effectively used in the Bohler traumatic clinic in Vienna, and now widely employed in many countries. Before leaving this thought, however, it may be well to remind ourselves of the extreme importance of carefully checking the peripheral nerve supply and the circulation of an extremity before proceeding with any measure which may obscure symptoms and embarrass us in a tardy effort to establish that these structures had, or had not, escaped original damage at the time of the primary injury. And of no less importance for all concerned is the matter of making accurate record of such pertinent facts at the moment.

With regard to the more severe fractures of other than the extremities, fracture of the skull is now said to be looked upon with what may be termed "radical conservatism". It is felt that to avoid all unnecessary moving of these cases is *so* important, that neither legal issues growing out of the manner of their incurrence nor the hysteria of anxious relatives warrants their being rushed to the X-ray laboratory for the mere matter of confirming or disproving fracture when eloquent signs and symptoms may be begging for our notice. The excuse that X-ray films may serve as a valuable guide to the operating surgeon may be disposed of by regarding the disturbing mortality rates when this class of casualty is subjected to injudicious surgery. Blood-pressure reading, eye-ground examination, spinal tap with pressure readings and simple inspection of the fluid are measures which can provide information of greater practical importance, when considered with the additional data obtainable through our ordinary powers of observation in the course of the physical examination. And these data being obtainable with the minimum disturbance to the patient, there will be greater likelihood for opportunity later to secure X-ray confirmation of the type and the extent of cranial injury—at a time more consistent with the individual's safety. This would seem more desirable than to be "panic-ed" into making a film record of a skull in order to impress the family, and the coroner, that we had done our utmost.

Fractures of the spinal column, with and without cord damage, are now seen with much greater frequency than when even the youngest of us were

sitting on the benches in a medical school. We recall only one such in our undergraduate observing experience, and that occurred in pre-Volsteadian era in a student who fell through a window in an extra-curricular exercise commonly known as "rough-house". That many compression fractures of vertebral bodies occurred in the acute "jackknifing" of the trunk in falls from a height, and were overlooked, now seems quite likely, with the revelations of the X-ray film in all suspicious cases. And recollection of "fielding errors on this play" is too distinct to need the painful reminder of a glance back into the record book of personal experience.

But formerly when no distal neurological evidence of damage to the cord was noted, the expense of X-ray with its, then, not too reliable technique, seemed to justify foregoing such diagnostic aids. Now we know that the forced flexion of the trunk on the pelvis which so frequently occurs to passengers, other than the driver, in the wreck of fast moving motor vehicles is often attended by compression fracture of one or more vertebral bodies in the region of the dorso-lumbar spine, and their early detection and treatment by hyperextension and fixation is a matter of great practical importance both from the disability-economic standpoint and the medico-legal as well.

Careful clinical examination of the spine and improved X-ray equipment and technique can now so positively hit the target in such a great number of cases that expense can be saved in both the number and size of the films used. Here, again, there is no occasion for panic to rush the technician, nor for the presence of cord symptoms to hurry us into action of doubtful value, just to meet the demands of relatives that "something be done and done quickly". Cord damage that occurs at the moment of primary injury is usually irreparable and laminectomy is of such questionable value that it is conceded by most authorities to be a step only justified after careful consideration and consultation with the neurological specialist. In this connection, however, it may be well to note a point made in recent years by an English surgeon of wide experience in industrial work. He called attention to the fact that careless handling of the spine casualty may itself produce cord damage where slight, or none, had occurred primarily; that since local injury resulted from forced flexion of

the spinal column, it might be well to handle all such cases in the prone position, placing them upon the litter and transporting them in that position to take advantage of the hyperextension provided by the sag of the supporting material or bed. And here, again, may we make valuable use of the local injection of novocaine solution over the obvious kyphos or the area of local tenderness at a certain spinous process which suggests the site of the injury. The relief from discomfort during the *necessary* handling and transportation, as well as the practical value of this type of anaesthesia (and the undesirability of general anaesthesia) in the definitive reduction of vertebral fracture is now well established.

Before leaving the subject of vertebral fractures it may be well to note the practical desirability of securing a lateral and an anteroposterior view of the lumbar spine in all cases of acute back injury to establish evidence of the age of other possible departures from the normal. Too many times delay has been the source of confusion to juries, counsel and judge as well, as to whether the evidence of abnormality disclosed by late X-ray films was the result of the injury as alleged, or had an earlier basis in older pathology or even in some developmental anomaly. The witness chair can be a most uncomfortable seat at best, but we have had occasion to reflect that we might have made it a bit more restful through the use of a little forethought in this matter. And additional information of value may be had in such lowback exposures if the anteroposterior view be "hit softly"; for in injuries to the lower ribs and transverse processes of the lumbar vertebrae renal damage may be well to suspect. Disturbance in the kidney shadow and the presence of gross blood in the catheterized specimen may be the means of saving us (and the patient) from the danger of over-looking the indication for exploring a kidney, while focusing our attention too earnestly on bone pathology.

Injuries to the cervical spine so frequently attended by promptly fatal results provide little cause for comment in such a discussion as this, except to remind ourselves of the ever-present need for extreme gentleness and care in our examination. This applies, of course, to any consideration of fractures and their handling, and is a point of so much greater magnitude when we have occupied

the very instructive position of being the patient ourself. Horse lovers know well the meaning of a "light hand" and we are all led to consider the feminine touch as the model of gentleness to be emulated. But I have had occasion to be revolted by the sight of a hard-boiled old Army Nurse clumsily removing the baseball shoe of a soldier with a broken ankle; and, conversely, to be both instructed and inspired by the gentleness and finesse of some rough-neck orderly with horse sense, giving first aid in a veterinary dispensary.

Acute trauma with suspected intra-thoracic or intra-abdominal injury may be regarded from the emergency standpoint, as we would the acute surgical complications of ordinary pathologic conditions which are known to occur in these areas. The advisability of transporting the patient promptly to some point where definitive hospitalization can be secured is, of course, dependent upon the diagnosis, the duration of the condition, and the distance to be traveled. The consideration which should control us in our decision for action or delay, however, is our estimate of the condition of the case as we see him. What shape is he in, we ask ourselves, and proceed to determine that by checking the blood pressure, regarding the pulse, noting the color, the temperature, comfort or distress, anxiety or composure and those data by which we estimate the degree of shock, if any, as present in the given case. Shock, we concede, calls for prompt action on the spot with such measures to combat it as we have at hand or can improvise, a resumé of which is hardly indicated at this time, but we may do well to remind ourselves of the value of the blood pressure as a guide to safety in considering transportation. In contemplating definitive measures for combating shock, we may remark as to the value of intravenous therapy that it is our conviction that the small direct transfusion of whole blood, repeated if need be, both in cases attended by hemorrhage and without it, is a procedure of definite value and is to be preferred to the larger, more heroic volume by the indirect method.

When to operate and when to compromise with time is a matter for consideration in the individual case, but certain guiding principles seem to be indicated from the wide experience of many authorities. That the acute traumatic wound of soft tissues can be regarded as safe for primary closure

after proper cleansing and debridement, if done within six to eight hours after incurrence, seems to be as firmly established as is the danger of attempting this procedure *after* such a time limit. Likewise is the duration of time since onset an important factor in making a decision to explore an acute abdomen, whether it be of traumatic origin or not.

Now all of these considerations lead us to the presentation of an idea, far from original, but one which conceivably has been a hope of every physician who has at any time engaged in practice in this section of the State of Virginia, and been called upon to attend such surgical emergencies. We refer to the desirability of a Community Hospital to serve the Northern Neck of Virginia. In view of the distances to be covered to the nearest cities where definitive hospitalization can be had and with regard for the economic and physical consequences of those distances under certain circumstances, it is to be hoped that some plan for the development of a local hospital can be demonstrated as both economically sound and possible of practical accomplishment. That the idea can be accepted as desirable and as conceivably constituting a public service, need hardly call for extensive debate. That such an institution could be justified *does* call for serious consideration, and it is with the hope that such data as we have been able to collect may be of practical value in arriving at a decision the following outline of the experience of another community within the State of Virginia, is offered here today.

With the hope of profiting by the experience of other districts in the matter of local hospitalization, it has been our purpose to combine business and pleasure trips this past summer in an informal study of rural and small town hospitals, and in traveling through much of southern New York State, Pennsylvania, Virginia and into parts of North Carolina we have had our interest much stimulated. Of all places visited it seemed that the hospital at Farmville, Virginia, constituted the best model for a community institution seen. At this locality chance provided an introduction to a local resident to whom is given the greater portion of credit for the success in development of the Farmville hospital and for its efficient maintenance and operation over a period of more than eleven years. Mr. Robert K. Brock, an attorney of Farmville, has

indicated his cordial interest in other communities' welfare by offering to place at the disposal of the people of the Northern Neck their experience at Farmville and has authorized the use of his name in this connection. He suggested that a questionnaire be sent him, cataloging questions as to methods of securing means, public interest and organization which it was felt the general public would be likely to ask and have a right to have answered. Added to this questionnaire are points in principles of administration, yearly operating expense, income, methods of meeting deficits and the possibilities of securing financial aid from other than local sources.

Such a questionnaire having been answered by Mr. Brock, the data are here briefly outlined, further details being available for presentation if general discussion and inquiry should be provided by these remarks.

(1) The approximate cost of construction of a fifty bed hospital with ten bassinets?

Answer: Construction of building, \$166,000.00; Cost of equipment, \$34,000.00.

(2) The approximate cost per patient per day in a rural community such as the Northern Neck?

Answer: \$4.61.

(3) The approximate yearly cost of heat and electric power?

Answer: \$4,500.00.

(4) Insurance and types of same needed?

Answer: Between \$500.00 and \$600.00; fire and Liability.

(5) Approximate number of beds allotted for: White, 36; Colored, 14; Adults, 44; Children, 6.

(6) Approximate yearly operating expense?

Answer: \$48,000.00.

(8) Approximate yearly income?

Answer: \$43,000.00, net earned receipts. \$10,000.00 contributions.

(9) Most dependable course of assistance toward meeting deficits?

Answer: Contributions, County Board of Supervisors, Town Council and Individuals.

(10) Opinion as to value of possible sources of material aid and moral support?

(a) Organized Medicine (AMA, State and County Societies).

Friendly.

(b) The legal profession.

Fair.

(c) The medical profession.

Fair.

(d) Business and industrial organizations.

Generally cooperative.

(e) Womens' Clubs.

Very friendly.

(f) The Press.

Friendly.

(g) The Church.

Friendly.

(h) Medical Colleges of the State.

Friendly.

(i) The United States Public Health Service.

Friendly (Refer to anti-venereal campaign and laboratory).

(j) State and County Officials.

Friendly.

(k) Political influence (Refer to possible Federal Aid).

State and Federal—played no part at Farmville.

(11) Data on Farmville's experience with the Commonwealth Fund.

Address, 41 East 57th Street, New York; Source of its income, The Harkness Foundation, chiefly; Religious connections, none.

Proportion of funds allotted to community, Two-thirds; Proportion of funds to be raised locally, One-third.

(12) Does the Commonwealth Fund reserve the right to dictate and enforce policies in the following?

(a) The community's needs as to size of hospital, geographical location, type of architecture, etc.

Answer: Yes.

(b) The equipment to be installed.

Answer: Yes.

(c) The selection of architect, if any.

Answer: Yes.

(d) The awarding of any contracts.

Answer: Yes.

(e) Administrative policies of the future.

Answer: Only in an advisory way and by suggestion.

(13) Are there any "strings attached" to the Funds support that can in any way embarrass or involve any local group or individual supporters?

Answer: It is provided that should the hospital, for any reason, fail, the Fund will expect to recover two-thirds ($2/3$) of what the property should bring at sale.

Now it is to be earnestly hoped that in presuming to present these data before this Society, no ulterior motive will be suspected of the writer. It is repeated that the idea is conceded as far from original. It so happens that having determined to locate in this section of Virginia upon retiring from active duty in the Medical Corps of the Regular Army, the time to devote to this subject has been provided by the fact that no demands of a busy practice are as yet experienced to detract; that in nineteen years of active duty in the Army, certain experience in hospital organization, construction and administration has been unavoidable; that a native interest in the problem here has been provided nourishment by what appears to be a real and growing need for some institution making available definitive hospitalization within this rather peculiarly situated section; that it is a matter of personal conviction that such would be a distinct asset, of immeasurable worth to every interest now present in this com-

munity and to those interests of the future; that a hospital *can be* of modest dimensions, but *so* equipped and *so* operated as to provide high standard service; and, finally, that it could conceivably increase the comfort and facility with which every physician of the community may engage in practice, to the end that the benefits of such may be passed along to the patient lying in the bed.

The data above given would indicate that other areas, in closer proximity to city conveniences, have felt their needs justified the additional burden of responsibility and expense to their communities and have demonstrated practically how such may be accomplished. But in contemplating this, as well as other innovations in the realm of social philosophy and obligation to which our attention is being forcibly called in the field of National affairs, it may be fitting for the people of this section to recall the familiar words of Pope's *Essay on Criticism*:

"In words, as fashions, the same rule will hold,
Alike fantastic if too new or old;
Be not the first by whom the new are tried,
Nor yet the last to lay the old aside."

SINUSITIS, OFFICE AND HOME CARE.*

T. A. POOLE, M. D.,
Washington, D. C.

With the aid of X-ray pictures, transillumination and other follow-up examination and methods today, we are realizing the extent to which sinus disease is affecting the health and comforts of people living in cold and warm, or dual, climates. Proportionately speaking, people in warm climates do not have sinus troubles such as hay fever, asthma, bad tonsils, and rheumatism as do those of the cold or dual climates; for instance, take the Bahamas. I can speak of the Bahamas because I spent nine years in this tropical climate where you have but little change in temperature, especially during the entire winter months. These conditions prevail in marked changeable temperatures and climatic conditions such as we have here in Washington.

A few years ago, we looked upon a nasal discharge as unimportant, but today we realize this symptom

parades under a disguise for other and more serious conditions, often misleading to the physician in his diagnosis. It can be said, and is possibly true, that sinusitis is often the foci of many of our body infections; therefore, doctors should not miss the opportunity to acquaint these patients with the full and the far-reaching significance of this disease, both in the acute and the chronic forms. The common head cold and the effects of these head colds or sinusitis are with the patient constantly unless *some* method of treatment is taken to remedy it.

The sinuses that are generally most affected are the frontals, maxillary, anterior and posterior ethmoids, and the sphenoids. With the aid of body temperature and lack of oxygen, secretions blocked up in these cavities provide an ideal media for the multiplication of "anaerobic" bacteria. When this occurs, you have toxic symptoms of absorption of pus directly into the blood stream of the individual

*Read before the semi-annual meeting of the Virginia, Maryland and District of Columbia Medical Society.

and as a result this individual then develops secondary anemia. With this we have the usual symptoms, followed by nasal discharges, with a feeling of fullness of the nose and ears, head pains, pains about the forehead and eyes, cheek bones, back of the head or occipital region, general malaise, cold hands and feet, tired and draggy feelings, especially in the afternoon. There are often severe and pronounced nervous symptoms, an inability to think clearly or concentrate, at times amnesia or lack of memory. Some old and chronic cases have slight chills and fever in the late afternoon. How similar are all of these symptoms to tubercular symptoms!

Formerly, we operated on the sinus cases to secure adequate and free drainage and free ventilation in order to give immediate relief to these patients. Today, we are avoiding operations as much as possible by establishing ample and permanent drainage and ventilation by packing the nose as far up into the superior turbinate spaces as possible with medicated packs and tampons, and, on removing these, the nose and throat are sprayed with a mild cleansing solution. Then a normal flow of these pent-up secretions are released when you apply gentle suction. Lastly, a medicated warm oil is then forced into these sinuses by means of an oil nebulizer under gentle air pressure.

Whatever treatment the physician employs, success lies in persistence with the technique and building up of the blood resistance by intravenous injections

of iron, arsenic, and even strychnine when indicated, and with common sense applied to our day and night hygienic habits.

We have compiled the following strict rules for the individual to follow:

Don't go out doors bare-headed.

Don't wet your hair and go out in the cold.

Don't forget you have five senses in your head and only one in your feet; therefore, it is more important to protect your head than your feet, five to one.

Don't sleep with your head uncovered to cold air.

Don't drink hard water to excess.

Don't sleep with your mouth open. Use a "Silent Sleeper".

Don't do anything in a hurry. If you become over-tired, your resistance is lowered.

Don't eat acid fruit in cold weather.

Don't forget that excess exposure to cold will cause frost bite or freezing enough to damage the sensitive membranes of the sinuses, eyes, ears, nose, throat, chest and even the heart muscle.

In conclusion, it may be said that conservative treatment has proven more beneficial than radical treatment in cases of sinusitis, or head colds. Constant vigilance regarding extremes in temperatures and persistent general physical care constitute the price of health for the sinus sufferer.

Demonstration of X-ray findings in these cases were shown at the conclusion of this paper.

606 Medical Science Building.

COMPLEX CONSCIOUSNESS IN RELIGIOUS DELUSIONS—CASE REPORT.

LEO I. HALLAY, M.D.,
McClure, Virginia.

When admitted to the Longview Hospital*, the patient appeared depressed, somewhat restless; and rather over-productive in his stream of talk. There was a great deal of suspiciousness in his facial expression; however, he cooperated; and both auditory hallucinations and religious delusions could be elicited. He was given calomel on admission and, as he stated spontaneously afterwards, he was very much astonished about the large quantity of feces produced. It was afterwards revealed in the mental examination that this spontaneous utterance of the patient has expressed the most important determining factor of

his complex consciousness. It was the complex of anal eroticism, as described by Sigmund Freud—the lustful tendency to save feces, which can be observed in the infantile sexuality and which tends afterwards to develop into greediness, pedantry, asceticism, and so on.

He cooperated fairly well both during the physical and mental examinations. The depression which could be observed upon admission was not very marked afterwards. It was rather the serious, gloomy facial expression of a medieval ascetic with no marked dissociation of emotions and without any grimacing. When speaking about his complexes a

*From the Longview State Hospital, Cincinnati, Ohio.
E. A. Baber, M. D., Superintendent.

marked increase of the emotional display could be observed; he then exhibited the behavior and the emotional reaction of a religious fanatic preaching in a meeting. No incoherence could be elicited in the structure of single sentences. There seemed to be no true incoherence in the connection between the single sentences. However, taken as a whole his story exhibited a considerable amount of autism, of dereistic stream of thought; especially when he was speaking about his religious ideas. Furthermore, there was no doubt at all, as the patient himself pointed it out: he experienced his auditory hallucinations as if somebody else were thinking aloud in his mind; which proves once more that auditory hallucinations are to be considered as a very important symptom of personality splitting.

The patient stated that he was born March 8, 1871, in Deute, Kassel County, in Germany. His father died when the patient was one year old, of smallpox. The patient's mother died in this country at the age of seventy-seven years, of old age. He had two brothers and two sisters. Only one sister is living. The oldest brother died of kidney trouble. The second brother was hurt by an automobile; he afterwards became worried and died from that; he was in this condition for about a year before he died. One sister died of flu during the war. The patient stated that he also had had the flu in 1917; he then drank very much beer and got well. He did not remember having had any sleep disturbances or double vision at that time; the only thing he did remember was the soreness in the nape of his neck and between his shoulders. He was the youngest of the family. He went to school in Germany and finished the common school at the age of fourteen. He stated that he had been a good student; however: "We had a very mean teacher, and he used to lick us with the stick!" He had been sociable when in school and at that time he was helping a brother in his carpenter shop. At the age of fifteen he came to C. In the U. S. the patient had served apprenticeship for two years in the cabinet-maker's trade and afterwards he worked with his brother in a factory. He did this work until twenty years ago. Then he worked on patterns. As patient stated, he spent a lot of money on it and lost it. For twelve years he then did work in planing mills. Then he did carpenter repair work. He had no work, especially during the winter for the last three years. Having saved \$2,450, he went to Florida and remained there

for the last two years. "All the \$2,450 were spent in Florida for living." As patient stated, he does not care very much for beer, but the hot weather in Florida had caused him to drink too much of it.

He married at the age of twenty-one, and has one son. Patient could not get along very well with his wife and after a married life of about seventeen years he left his wife and his son and he did not know anything about their whereabouts. His wife afterwards got a divorce. Patient did not marry again. He claims that he always has been sociable and always had many friends. For the last years, however, he did not care much for company. He never was arrested in his life. (Alcohol?) "In the summer time when it is very hot, I like a glass of beer; whiskey I do not drink at all. Beer is a good time for me: that is the reason I drank a great deal of beer in Florida—to keep up time for me. Once I happened to drink too much whiskey," (contradiction) "just to kill a cold, and then at mid-night I was dead sick. I then had to stay at home the next day and could not go to work." With a great deal of emphasis in his voice the patient then stated: "My mind was always good, just as good now as every time!" (Why here?) "They said to me, they are going to put me in a home." Sadly: "Then I found out I was here." Hallucinations: (Did you hear voices?) Stubbornly: "I do not like to talk about that." (You have heard voices?) "That's all I can say; God forbids me to talk!" (God's voice?) "Jesus' voice . . ." (What did he say to you?) "Well, that is as far as I can go!" He has been hearing God's voice for the last two years. (How did it start?) "I wanted to take pills and He did not want me to take them, this were cascades. I had a great deal of trouble with my stomach, and that was the first time I wanted to take them. After I swallowed these pills I had the impression that they wanted to come up; they burned in my stomach. I lay in my bed and wanted to hold them in, wanted to get through; and God then said half in German, half in English: 'Sei nicht zu langsam about getting them out'. This should mean, get them out quick. Then I just thought in my head: If I have to get them out, I'll take two of them at the breakfast next morning. Then Jesus got mad and called me: 'You white head!', and he showed to me a picture of me with white hair on my head. That should mean that if I took the pills at the breakfast next morning I would be a white head." Pathetically: "My head was

turning white. I got so scared when He called me 'white head' and I thought, I better get them out quick. No, I did not take them next morning. I went to the toilet and got them out. It took about fifteen minutes, and it was a hard time to get them out."

This all sounds very silly. It can not be comprehended by normal psychology. However, it appears more or less comprehensible when we consider the anal eroticism as the most important trait in the patient's character and take it for granted that this complex which has been adapted to the reality for many years suddenly has become so strong as to break the layer of reality consciousness covering it, and then split off from the reality consciousness, this complex takes the pathological shape of religious hallucinations and delusions.

(Can you describe this voice?) "Well, that voice is only in my head. He does not talk like you or I do" (?) "Somebody else in my head besides me. Suppose I am thinking about nothing. Sometimes if I feel bad in the evening before I go to bed worried, the next morning I hear somebody calling me: 'Heinrich.' You see He wants to make me feel better. That's why He calls me Heinrich in German. One time I felt that he showed me a bunch of roses the next morning. He does not like to see me feel bad or worried you know. Sometimes He called me 'Mister Müller'" (name changed), "'Mister' in English, 'Müller' in German. He can talk German just as well as English. The first time before I went to Florida, I saw Jesus when I was sleeping, standing in the field right in front of me, about ten feet away. I saw a young fellow about thirty years old, all dressed in white like a captain on a ship. As soon as I saw this man standing in the field, the feeling came over me that this was Jesus. I had the feeling that I wanted to put my arms around him." The patient reproduced this movement with his arms. "Just at that time he was gone. I got such an awful feeling when I saw him. This feeling told me it was Jesus." Apparently resistance against homosexuality, as defined by Freud. "After New Year, 1931, I got the feeling I have to go to New Orleans, where the big ships are coming from Europe, where the captains have white clothes

on. I went to New Orleans and stayed there for about two weeks. Then I went to Pensacola. There I felt all right. I saw there water and big ships coming in from Europe. I fished, caught plenty of fish, I had a good time. In the fall of the year I saw Jesus again. I saw two big iron gates with thick iron bars. They opened to the inside, and I was out in the open field again. As soon as I saw the big gates I thought, these are the gates of heaven. I then saw young girls in the twenties coming from the right and from the left corners with white dresses on. The girls from each side met each other in front of the gate. As they met together, they walked through the gates, about twelve on each side. They all went into the gates and Jesus was the last. He looked like a Catholic priest in a silk garment; it looked pretty and attracted my attention. After He went through He shut the gates and it was all over. I thought this was the gate of heaven, the women were angels and the Catholic priest was Jesus. The women had no wings and looked like regular girls."

Delusions: "If you want to know more, you have to wait until I get the order from Jesus to tell you more." Pathetically: "He has been my boss for the last two years. If I don't take a bath every week, He tells me: 'You better take a bath, you are getting filthy!'"

These are apparently not very well systematized religious delusions. No persecutory delusions could be elicited. The patient was very well oriented in all spheres and no organic memory defects could be noted. His general information was excellent. His judgment was impaired and he had no insight into his true condition: "My mind is as clear as yours."

Impression: This is a psychosis with auditory hallucinations and religious delusions which did not seem to be very well systematized.

Differential diagnosis: (1) Abortive schizophrenia, (2) Paranoid condition.

Diagnosis: Paranoid condition.

The most important factor in this patient's complex consciousness appeared to be the anal eroticism, as defined by Freud, the lustful tendency to save feces.

Correspondence

Watermelon and Whisky.

TO THE EDITOR:

A recent-sudden death, investigated by me as county coroner, leads me to make an inquiry. O.E.L., aged sixty-four, railroad section foreman, ate heartily of watermelon at a late hour of night, and drank several drinks of whisky. He was preparing to go to bed at midnight, when he suddenly expired. In discussing the case casually with an acquaintance of his, this man remarked that he had known of a similar case, of which he gave details and the name. This I would have put down as a mere coincidence had I not learned from the undertaker that he had been called to conduct funerals for three other similar cases, in which each man had eaten heartily of watermelon and likewise taken whisky rather liberally, and suddenly died. It seems to me that five cases of the same sort would measurably preclude coincidence.

Now the query I wish to propound is this: Is there anything in a combination of watermelon and whisky of a toxic nature? Perhaps some toxicologist might enlighten us on this point.

In fairness, I might add that one doctor of medicine to whom I mentioned the matter states that he not long ago attended a picnic at which both the above substances were partaken of, and there were no fatalities.

Will the brethren give us their opinions, *pro* and *con*.

E. P. TOMPKINS, M.D.,
Coroner of Rockbridge County,
Lexington, Va.

Here's to the National Health Conference! May it Take a Healthy View of Public Health.

TO THE EDITOR:

The recent statements of both President Roosevelt and Dr. Thomas Parran, Surgeon General of the Public Health Service, in regard to the medical care of the indigent, the financially handicapped, or the improvident of the country, bring right to the forefront the question of socialized medicine.

If socialized medicine means, as some seem to think, the regulation of the medical profession by a bureaucratic department in Washington working through subsidized state and community depart-

ments, then it follows that medicine as a profession will be emasculated.

If, however, socialized medicine means, as it could be made to mean, the extension of federal, state, and community health service, which will encourage and assist the profession of medicine in finances, in facilities for research, and in treatment in order that the indigent, the financially handicapped, and the improvident may be better cared for in their health, then there can be no possible objection on the part of the profession to such an ideal situation.

Like that of most reforms and new ideas, the motive power behind the idea of socialized medicine appears to be emotion without the controlling factor of reason. Heat has been applied where a refreshing temperature was needed, sentimentalism has superseded practicality and jingoism is taking the place of judgment. It is odd that a man with good intentions may try to regulate, willy-nilly, others whose intentions may be just as good or better than his own. As Elizabeth Browning puts it in "Aurora Leigh"—

"Indeed he builds his goodness up
So high, it topples down to the other side
And makes a sort of badness."

The problem divides itself into two parts: First, hospital care for the indigent and the financially handicapped or improvident; second, physicians' care of the indigent and the financially handicapped or the improvident.

Let us further dissect the subject.

First—consider the indigent who needs hospital care. This should be provided by the national government, the state, the community, or the philanthropic. Can there be any division of opinion here?

Second—consider the indigent who needs the attention of physicians. If the indigent is in an eleemosynary hospital, however it is supported, he will receive proper medical attention. Physicians gladly contribute their services. If the indigent is not in a hospital he should receive home or office attention free and the various agents mentioned should see that a practicing physician is supplied and they should pay him a modest fee for his services. How can this be a great problem? It certainly does not require a state of socialized medicine to settle it.

Third—the financially handicapped and impro-

vident who need hospital care may get such care and it should be seen that they can get it in the wards of hospitals at modest rates. This can be done through hospital insurance policies, preferably extra-governmental but backed by the government if necessary. Surely, again, we do not bring up the question of the national socializing of medicine.

Fourth—and here's the rub. The financially handicapped and the improvident must receive adequate physicians' attention. They already get much more of it than the public or possibly even the government realizes. It must be a rare thing indeed that the treatment of any patient is turned down by a medical practitioner. Indeed many of the handicapped or improvident cannot pay for adequate and proper medical attention only because the government, the state, the community, the press, the radio, and the advice of untutored friends have allowed or induced them to spend their substance, and often their sustenance, on every sort of irregular doctor or quack and for every kind of improper remedy and drug long before a physician, who cannot and does not wish to advertise, is consulted. If the medical profession were considered rather than castigated this problem would largely be solved. If insurance companies or even the government would issue and solicit sick benefit policies at reasonable rates and if banks, or the government if you like, would lend sick-aid money at low rates of interest, the problem of the financially handicapped and the improvident would be as well solved as any of our other national problems, and probably better solved.

The medical profession has never objected to governmental activities in the realm of communicable disease—it rather has been thankful. But if, by socializing medicine, initiative is thwarted, competition is killed, medicine is made a job holding occupation instead of a profession and is robbed of all of its charitable and humanitarian impulses, and if politics are made to take the place of the policies of the American Medical Association, then the indigent, the financially handicapped, the improvident, and the medical profession of America will have been done an irreparable injury.

BEVERLEY R. TUCKER, M.D.

Richmond, Virginia.

July 21, 1938.

Miscellaneous

A Family Physician Honored By His Patients.

Dr. B. Roscoe Gary of Newport News was the recipient of an unusual honor, recently, commemorating the completion of forty-seven years of practice in that city. On this occasion, a number of his patients in Newport News and on the Peninsula presented him with a silver service bearing the following inscription: "Presented to Dr. Benjamin Roscoe Gary as a token of the love and esteem of his patients, June 23, 1938." Accompanying this was a written tribute, stating that "This gift is a small token of the sincere devotion of your patients for their doctor, adviser and friend. Your noble, unselfish life is ever an inspiration to us all. Your untiring self-denial and fidelity to duty must be an incentive to others of the medical profession. We wish for you many years more of active service."

Dr. Gary is one of the pioneers of Newport News, and this tribute after nearly a half century of service is one of which any doctor might be justly proud. Our good wishes go out to the doctor for a continuance of health and strength to continue his work!

In connection with this event, Dr. Gary prepared the following article which may be read with profit, especially by the younger men who have just entered the medical profession.

MEDICINE AS A LIFE WORK

The first thing is to take complete inventory of yourself. It is not wise to go into medicine unless you feel sure of yourself. Have you the intellect; have you the character; have you the determination to work, work and work—and to deny yourself many recreations and pleasures, and with it all be happy?

Have you the real ideals of the practice of medicine? It is truly a profession of service before self. Have you common sense and judgment? If not, I beg of you not to take medicine.

If you are going in with the idea of making money, or even making a living, then medicine is not the profession for you. If you are simply working for what you can get out of it and have not the right ideals, you will be quite unhappy and a misfit in medicine. Of course a laborer is worthy of his hire and all of us hope to make a living and it is right

we should—but if money is the physician's object he is a disgrace to a wonderful profession.

Never be satisfied with your work. Be continually trying to do better. The more intelligently you work the happier you will be. Realize yours is a sacred mission. You render service to human lives. That is a big and awful responsibility. The more your patient honors and trusts you, the greater your responsibility.

Try to put yourself in the patient's position—how would you wish to be considered and treated. The Golden Rule is fine in all walks of life, but nowhere better, sweeter and truer than with the physician. Try to treat the patient as if he were a dear member of your own family. When you have done that for your patient, you have done your best. Encourage your patient all you truthfully can. The mind has a great deal to do with the patient's progress. The patient's affairs and confidences should be sacred and safe in your possession. The love, loyalty and confidence of your patient is your biggest recompense. Ever keep clean hands, clean conscience and a clean mind, and with the love of a little child in your heart.

We have disappointments, trials, hard knocks and at times our very best services are not appreciated.

Be friendly with your fellow practitioners. Talk shop often. They can help you, and you can help them. Many of my most helpful consultations I have had with the patient never knowing I had consulted another physician. In many cases, not ever giving the patient's name, I talk over the case with several of my physician friends, then use my best judgment. The patient has not been worried with a consultation but has had the benefit. Bedside consultations are very important and helpful in many cases. I

have always been proud of the fact that many of my best friends were members of my own profession.

(A word to the parents here today.) Do not say you are going to make a physician of your child. I have seen that do many a boy a great wrong. I would not advise my son or brother to take up this or that life work. Let each one choose for himself, and then try to help him however you can.

A great many people feel physicians have an easy time, sit in their offices and ride around. That is far from the true story. With a physician no time is really his own, and the responsibilities are very great. There is an old saying that man's work is from sun to sun but woman's work is never done. This is no longer true of man's. He has been fortunate to have his hours of work reduced very much, but a physician is like a women, never done.

In taking medicine, do not start out with the idea of being a specialist. First learn all you can about all branches of medicine, then do general practice for five years or more. After that if you find a special work appeals to you, specialize on it.

Do not feel that every physician should live in the city. The country folk need physicians and many of our country physicians are great benefactors of humanity and the leaders of the people of their section, looked up to, honored and loved by all.

With all the trying times, great responsibilities, unpleasantness and hard knocks, I love my profession and would not give it up. And had I to live my life over, I would above all other callings prefer to be a physician. The beauties of the associations far outweigh the responsibilities, labor, work and hard knocks.

God bless the physician. May he ever give better service, be more honored and loved.

American Board of Internal Medicine.

Written examinations for certification by the American Board of Internal Medicine will be held in various parts of the United States on Monday, October 17, and on Monday, February 20, 1939. Formal application must be received by the Secretary before September 15, 1938 for the October examination, and on or before January 1 for the February examination.

Application forms may be obtained from William S. Middleton, M.D., Secretary-Treasurer, 1301 University Avenue, Madison, Wisconsin, U. S. A.

The American Public Health Association

Is to hold its annual meeting in Kansas City, Mo., October 25-28, for which occasion such a varied program has been arranged, with nationally-known speakers, that it should prove of interest in some way to all of the 3,500 health authorities who are expected to attend. More than 400 papers and reports will be presented and discussed in various sections during this time. For detailed information address the Association at 50 West 50th Street, New York City.

Reports for Sixty-ninth Annual Session of the Medical Society of Virginia

The Council

Minutes of the winter meeting of the Council were published in the March, 1938, issue of the MONTHLY (see pages 168 to 171 inclusive).

Report of Executive Secretary-Treasurer

TO THE PRESIDENT AND MEMBERS OF THE HOUSE OF DELEGATES

At the 1937 meeting, we reported a membership of 1,846. Since then there have been ninety-one additions—eighty-eight new members and three re-instatements; the losses have been eighty-two—thirty-five deaths, sixteen resignations, and thirty-one dropped for non-payment of dues. This makes a net gain of nine members, or a membership of 1,855.

As usual, a large amount of detail work has been accomplished in our office, and committees have functioned actively as reports in this issue of the MONTHLY will indicate. These should be read by each member as they give an insight into the work of the Society and matters of interest are recorded.

Due to the death of Dr. Fletcher J. Wright, chairman of the Advisory Board to the Woman's Auxiliary, Dr. Simpson, president, appointed Dr. P. St. L. Moncure of Norfolk as chairman of the Board and named Dr. Frederick Gohnauer of Upperville as the third member.

Dr. F. P. Fletcher of Richmond was appointed by the president as representative from this Society to the Virginia Welfare Council and Dr. Moncure was appointed as representative to the Virginia State-Wide Safety Conference in Norfolk.

Drs. Wright Clarkson, Walter B. Martin and J. C. Flippin, regularly elected delegates to the American Medical Association, attended the meeting in San Francisco, and their report appears in this journal. As many State Societies make an appropriation for expenses of their delegates, this is a matter which might have the consideration of our Society.

As reported last year, we have forty-seven chartered component societies representing ninety counties and one city. The former James City-New Kent County Medical Society, however, applied for and was granted a new charter in the name of the Williamsburg-James City County Medical Society, as New Kent County is included in the Mid-Tidewater Medical Society.

Again, we call attention to the History of Medicine in Virginia, published several years ago. These are three valuable volumes and should be secured now by those interested as the supply is limited and there will be no re-printing.

The financial year of the Society does not close until

September 30th and a detailed statement on the finances of the Society will appear in the issue of the MONTHLY which carries the minutes of the Danville meeting. We are glad to advise, however, that this has been a good year and our financial condition is better as of August 1st than at the same date in 1937.

We wish to thank the officers and members of the Society for the cooperation they have given us at all times.

AGNES V. EDWARDS,

Executive Secretary-Treasurer.

Report of Delegates to the American Medical Association

The San Francisco meeting was attended by more than six thousand physicians. The sections on scientific work were interesting and well attended and the scientific exhibits were exceptionally instructive. The buildings were scarcely large enough to accommodate the crowds. Everyone seemed to feel that it was the largest and most successful medical meeting ever held on the Pacific Coast.

The most outstanding incident of the meeting was a message from Miss Josephine Roche. This was read to the House of Delegates by Dr. Warren Draper. In this message she announced the National Health Conference to be held in Washington, July 18-20. Every physician should read this message and the reply of the House of Delegates. You will find them on pages 52 and 56 of the July 2nd issue of *The Journal of the American Medical Association*.

Dr. Spencer T. Snedecor of New Jersey presented certain resolutions requesting that the Editor of *The Journal of the A. M. A.* be instructed to confine his writings to official publications of the A. M. A. These created considerable excitement in the House of Delegates but the resolutions were defeated.

The medical profession of San Francisco worked hard and with great efficiency to make this meeting a success. Dr. Howard Marrow, Chairman of the Local Committee on Arrangements, worked particularly hard in making preparations for the meeting and was unfortunate in being sick during the meeting, but his services were appreciated. He was elected vice-president.

Dr. Rock Sleyster of Wauwatosa, Wisconsin, was selected as President-Elect. He has served organized medicine for many years and his election was particularly pleasing to the Board of Trustees of which he was chairman from 1935 to 1937.

The space given to this report is too limited to describe adequately all that occurred at this meeting and we wish to urge physicians to read carefully the proceedings of the House of Delegates as given in *The Journal of the Amer-*

ican Medical Association, beginning with the issue of July 2nd.

J. C. FLIPPIN,
W. B. MARTIN,
WRIGHT CLARKSON, *Secretary*.

Report of Publication and Program Committee

This Committee has held its usual meetings during the year to arrange the program for the annual meeting of the Society and to discuss matters pertaining to its official publication, the *VIRGINIA MEDICAL MONTHLY*.

As a matter of convenience for binding and reference, several libraries suggested that we have the volume of the journal coincide with the calendar year. We acceded to this request and changed the date for beginning the volumes from April to January. The *MONTHLY* seems to be progressing satisfactorily and we have not deemed it necessary to make other changes.

The program for the Danville meeting has been arranged along the same lines as last year and we hope may prove interesting.

H. B. MULHOLLAND,
H. A. TABB,
WYNDHAM B. BLANTON,
Chairman.

Report of the Committee on Scientific Exhibits and Clinics

TO THE PRESIDENT AND MEMBERS OF THE HOUSE OF DELEGATES:

During the past few months we have been busy attempting to secure scientific exhibits from the members of the Society and from institutions in the State and nearby. Our efforts have not been in vain and we are delighted to report the applications up to August 10th have been sixteen in number. One of the exhibits is a talking movie, which we feel will be of interest to the members and can be used for a clinic if the Society so desires. The list of exhibitors is as follows:

Dr. Otis Anderson, State Health Department.
Dr. Regena C. Beck, Richmond.
Drs. Isaac A. Bigger and Harry J. Warthen, Richmond.
Dr. Austin I. Dodson, Richmond.
Dr. E. C. Drash, Charlottesville.
Dr. H. B. Haag, Richmond.
Dr. Edgar C. Harper, State Health Department.
Dr. John S. Horsley, Jr., Richmond.
Dr. Linwood D. Keyser, Roanoke.
Dr. Rolland J. Main, Richmond.
Drs. Edward B. Mewborne and E. L. Alexander, Newport News.
Dr. W. Ambrose, McGee, Richmond.
Dr. I. C. Riffin, State Health Department.
Dr. Charles S. Robins, Sr., Richmond.
Drs. Frederick W. Shaw and Thomas W. Murrell, Richmond.
Dr. R. A. Vonderlehr, U. S. Public Health Service.
Dr. Fred J. Wampler, Richmond.
Dr. H. H. Ware, Richmond.

Last year the Scientific Exhibit Committee was fortunate in having such a good local chairman as Dr. W. W. S. Butler, who saved for us all material used in Roanoke for scientific booths. The material is to be forwarded to

Danville and used again. In this manner we will have more funds to further additional exhibit space. It is our earnest desire gradually to interest the Society in bigger and better exhibits and some day to make the interest in them parallel that in the Scientific Sections. As in previous years the appropriation which is \$100.00, or as much of that amount as needed, will be made available to the local chairman by the Executive Secretary of the Society, to whom an itemized account will be submitted.

It is felt that if the Scientific Exhibit Committee be allowed to have the privilege of appointing a member from each section of the State or from several branches of medicine or surgery we might secure more exhibits.

As in the past the Committee acknowledges with thanks the generous help of Miss Agnes Edwards, who has been of invaluable assistance.

Respectfully submitted,
WILLIAM R. ROGERS,
STAIGE D. BLACKFORD,
W. AMBROSE MCGEE, *Chairman*.

Report of Legislation Committee

TO THE MEMBERS OF THE HOUSE OF DELEGATES:

We wish to report the activities of the Legislative Committee during the past year. There was considerable medical legislative matter, most of which was sponsored by the State Health Department, and the State Health Commissioner called upon your chairman a number of times to appear before committees. A few bills which the Health Department did not think would be helpful to the State were defeated by the activities of the Health Commissioner. There was introduced a bill to create a Board of Naturopathy, which originated in Norfolk. Your chairman, with Dr. J. K. Hall, also a member of the Committee, and Dr. L. T. Price, appeared before the Legislative Committee and opposed the passage of same, as a result of which the Committee voted unanimously to kill the Bill. It was hardly necessary for our Committee to have gone before the Legislative Committee about this, however, as they were alert and recognized the bill as of no merit.

ROBERT J. PAYNE,
JAMES K. HALL,
H. U. STEPHENSON, *Chairman*.

Annual Report*

Department of Clinical and Medical Education

The Department of Clinical and Medical Education continued during the year the work in postgraduate education inaugurated in former years. The work consisted principally of lecture-clinic circuits which were conducted by full-time instructors. The subjects treated by this method were Obstetrics and Pediatrics. Supplementary work included the customary clinics at the two State Medical Schools, two short intensive courses at outlying centers, assistance in engaging speakers for regular society meetings, and the distribution of reading material. We submit herewith a more detailed report on these several activities.

*This report was adopted by the Department at its annual meeting held in Richmond on July 28, 1938, and approved for submission to the Medical Society of Virginia through the *Virginia Medical Monthly*.

LECTURE-CLINIC CIRCUITS

Obstetrics and Gynecology:

The following lecture-clinic circuits treating the subjects of Obstetrics and Gynecology were conducted during the year with the results indicated:

| <i>Area</i> | <i>Circuit No.</i> | <i>Number Attending</i> | <i>Number Meetings</i> | <i>Total Attendance</i> | <i>Number Visits</i> | <i>Consultations</i> |
|---|--------------------|-------------------------|------------------------|-------------------------|----------------------|----------------------|
| Galax, Marion, Wytheville, Abingdon----- | X | 47 | 19 | 134 | 119 | 36 |
| Pulaski, Christiansburg, Blacksburg, Pearisburg----- | XI | 49 | 20 | 157 | 166 | 48 |
| Fincastle, Salem, Rocky Mount, Stuart----- | XII | 24 | 25 | 82 | 106 | 14 |
| Lovingston, Amherst----- | XIII | 13 | 10 | 57 | 32 | 8 |
| Fairfax, Warrenton, Culpeper----- | XIV | 29 | 15 | 114 | 127 | 15 |
| Bedford, Altavista, Chatham, Danville, Martinsville-- | XV | 50 | 25 | 162 | 212 | 31 |
| Orange, Charlottesville, Waynesboro----- | XVI | 27 | 14 | 82 | 87 | 17 |
| Staunton, Harrisonburg, Woodstock, Front Royal---- | XVII | 26 | 18 | 75 | 112 | 6 |
| Total----- | 8 | 265 | 141 | 863 | 961 | 175 |

While a wide variety of topics are dealt with in these clinics, the lectures on (1) "Complications of the Second State of Labor," and (2) "The Treatment of Eclampsia," were put in mimeographed form and distributed to the doctors enrolled.

Due to the fact that practically every community in the State had been given an opportunity to have a course in the subject, it was felt wise to discontinue at the end of the year the work in Obstetrics and Gynecology, and to look to the introduction of other types of work or to similar types of work in other subjects.

| <i>Area</i> | <i>Circuit No.</i> | <i>Number Attending</i> | <i>Number Meetings</i> | <i>Total Attendance</i> | <i>Number Visits</i> | <i>Consultations</i> |
|--|--------------------|-------------------------|------------------------|-------------------------|----------------------|----------------------|
| Galax, Marion, Wytheville, Abingdon----- | IX | 48 | 16 | 133 | 111 | 90 |
| Fairfax, Warrenton, Culpeper----- | X | 29 | 15 | 112 | 105 | 28 |
| Fredericksburg, Oak Grove, Warsaw, Kilmarnock, Heathsville----- | XI | 31 | 24 | 91 | 144 | 41 |
| Bowling Green, Tappahannock, West Point, Gloucester | XII | 22 | 21 | 60 | 114 | 15 |
| Williamsburg, Hampton, Newport News, Norfolk---- | XIII | 38 | 23 | 123 | 112 | 42 |
| Coeburn, Norton, Stonega, Appalachia, Pennington Gap, Gate City----- | XIV | 42 | 25 | 114 | 95 | 48 |
| Total----- | 6 | 210 | 124 | 633 | 681 | 264 |

It will be interesting to note at this point, however, that while he was engaged as an instructor in Obstetrics and Gynecology, Dr. Shamburger conducted seventeen circuits in which 522 doctors were enrolled. He held 280 meetings with a total attendance of 1,612. Besides, he made in excess of 1,192 office visits and held upon invitation 353 consultations. While the average attendance (5.8) at the lecture clinics may seem low, it should be remembered that Dr. Shamburger conducted clinics and visited physicians in communities which had not been reached by the former postgraduate clinician, Dr. M. E. Lapham, when he was conducting work in closely related subjects.

The Department was very well pleased, indeed, with the services rendered by Dr. Shamburger. It feels that

Dr. Shamburger's instruction was of a very high order. Furthermore, the reaction of the doctors in the State has been unanimously favorable to Dr. Shamburger and his work. The members of the Society will learn with interest that Dr. Shamburger has been engaged by the State De-

partment of Health to conduct in this State work in his chosen field. The committee is glad to announce that through the continued cooperation of the State Department of Health, Dr. Shamburger is still available for lectures and consultation on subjects in the field of Obstetrics and Gynecology.

Pediatrics:

The lecture-clinic circuits with the results indicated have been conducted during the year by the clinician, Dr. Robert B. Hightower:

| <i>Area</i> | <i>Circuit No.</i> | <i>Number Attending</i> | <i>Number Meetings</i> | <i>Total Attendance</i> | <i>Number Visits</i> | <i>Consultations</i> |
|--|--------------------|-------------------------|------------------------|-------------------------|----------------------|----------------------|
| Galax, Marion, Wytheville, Abingdon----- | IX | 48 | 16 | 133 | 111 | 90 |
| Fairfax, Warrenton, Culpeper----- | X | 29 | 15 | 112 | 105 | 28 |
| Fredericksburg, Oak Grove, Warsaw, Kilmarnock, Heathsville----- | XI | 31 | 24 | 91 | 144 | 41 |
| Bowling Green, Tappahannock, West Point, Gloucester | XII | 22 | 21 | 60 | 114 | 15 |
| Williamsburg, Hampton, Newport News, Norfolk---- | XIII | 38 | 23 | 123 | 112 | 42 |
| Coeburn, Norton, Stonega, Appalachia, Pennington Gap, Gate City----- | XIV | 42 | 25 | 114 | 95 | 48 |
| Total----- | 6 | 210 | 124 | 633 | 681 | 264 |

In these postgraduate courses lectures have been delivered on the following topics, these lectures having been mimeographed and distributed to the doctors attending the course:

1. The Feeding of Infants and Children.
2. The Acute Abdomen in Childhood.
3. The Premature Infant.
4. Acute Nutritional Disturbances.
5. Immunizations—Dangerous Drugs.

Within another six months the State will have been covered with the lecture-clinic circuits in the subject of Pediatrics. When this is accomplished, some other type of work will be planned for Dr. Hightower. The President of the Department and the Executive Secretary were

instructed to seek the advice of the Committee on Child Welfare in this matter.

MEDICAL SCHOOL CLINICS

Postgraduate clinics were held during the year at the Medical College of Virginia and at the University of Virginia Medical School. These meetings were reported in the December, 1937, and June, 1938, issues of the VIRGINIA MEDICAL MONTHLY. The interest and attendance at the Medical School Clinics this year seemed to be greater than in former years due perhaps to the appearance of more outside speakers on the programs and to the publicity given to the Centennial Celebration at the Medical College of Virginia of which the Medical College Clinic was a feature.

OTHER SERVICES

Internal Medicine:

Following the approval given at a previous meeting of the Department of Clinical and Medicine Education, the Executive Secretary arranged for one short Extension course in Internal Medicine on the Eastern Shore and is arranging for another in Southwest Virginia to be held at an early date.

The course on the Eastern Shore was conducted by Drs. Wm. B. Porter and T. Neill Barnett of the Medical College of Virginia. Each instructor spent two days on the Eastern Shore delivering lectures at Nassawadox and Accomac Court House. The following subjects were discussed:

1. Etiology and Treatment of Peptic Ulcer—Dr. Barnett.
2. Diseases of the Colon—Dr. Barnett.
3. Hyperinsulinism—Dr. Barnett.
4. Classification of Heart Diseases with Special Reference to Focal Infection—Dr. Porter.
5. The Pathogenesis of Renal Insufficiency—Dr. Porter.

It was reported that the doctors on the Eastern Shore were well pleased with the course although the attendance was not quite as good as had been hoped for. A fee of \$5.00 was charged each doctor attending.

It is planned to use instructors from the University of Virginia Medical School for the course now being organized for Southwest Virginia.

Program Speakers:

In a number of cases speakers have been furnished for programs and clinics conducted by local societies. One of the most successful programs of this type was held at Norton, Virginia, on April 30, 1938, by the Clinch Valley Medical Society. Through the assistance of the Chairman and Executive Secretary the following speakers who spoke on the topics indicated were provided:

1. Immunizations in Children—Dr. Robert B. Hightower, Instructor in Pediatrics, Department of Clinical and Medical Education.
2. Various Types of Heart Disease: Their Management in Regard to Industry and Compensation—Dr. Paul Camp, Medical College of Virginia.
3. The Laborer with Diabetes—Dr. William R. Jordan, Medical College of Virginia.

The Chairman, of the Department, Dr. J. Morrison Hutcheson, was requested to inform the local societies that speakers may be obtained at any time for lectures, short

courses and clinics through arrangement with the Executive Secretary. Such speakers will be drawn from the faculties of the medical schools in Virginia, the profession at large in the State, and, in some instances, from outside the State.

FINANCIAL REPORT

The financial report submitted herewith covers the period from August 21, 1937, to July 27, 1938. A corrected report for the previous year is also included.

It will be noted that there is a cash balance of \$511.83 as of July 27. A considerable part of this balance will be expended in carrying on the work of the Department during the months of August and September.

Attention is called to the fact that funds which were available from the Children's Bureau through the State Department of Health for postgraduate instruction in Obstetrics, Gynecology, and Pediatrics will not be available for instruction in other subjects. In view of the fact that the State has been covered with courses in Obstetrics and Gynecology and will have been covered with courses in Pediatrics also by March 1, 1938, some other types of instruction should be provided. For this purpose the Department of Clinical and Medical Education requests a continuation of its past annual appropriation of \$750 in addition to any surplus that may be in hand at the end of the current year.

J. MORRISON HUTCHESON,

Chairman

GEORGE B. ZEHMER,

Executive Secretary.

CORRECTED FINANCIAL STATEMENT OF DEPARTMENT OF CLINICAL AND MEDICAL EDUCATION

September 4, 1936 to August 21, 1937

RECEIPTS

| | |
|---|------------|
| Balance on hand September 4, 1936..... | \$402.76 |
| Fees received to date | 707.50 |
| Appropriation Medical Society of Virginia | 410.00 |
| Total Receipts..... | \$1,520.26 |

DISBURSEMENTS

| | |
|--|------------|
| Dec. 1, 1936, E. L. Woolfolk (salary).... | \$ 90.00 |
| Dec. 8, 1936, Dr. Charles Savage (refund) .. | 2.50 |
| Jan. 1, 1937, E. L. Woolfolk (salary).... | 90.00 |
| Feb. 1, 1937, J. N. G. Finley (salary).... | 90.00 |
| Mar. 1, 1937, J. N. G. Finley (salary).... | 90.00 |
| Apr. 1, 1937, J. N. G. Finley (salary).... | 90.00 |
| May 1, 1937, J. N. G. Finley (salary).... | 90.00 |
| June 15, 1937, Extension Division (refund on advances) | 324.40 |
| June 29, 1937, Extension Division (refund on advances) | 475.61 |
| July 1, 1937, J. N. G. Finley (salary) | 90.00 |
| July 15, 1937, University Press (printing) .. | 10.50 |
| Total Disbursements | \$1,443.01 |
| Balance on hand August 21, 1937 | \$77.25 |

FINANCIAL STATEMENT

August 21, 1937 to July 27, 1938

RECEIPTS

| | |
|---|------------|
| Balance on hand August 21, 1937 | \$ 77.25 |
| Received from Fees | 562.04 |
| Received from Medical Society of Virginia | 750.00 |
| Total Receipts | \$1,389.29 |

DISBURSEMENTS

(Itemized statements given for all expenditures)

| | |
|---|-----------|
| Salaries, Wages and Expenses of Lecturers | \$128.20 |
| Office Supplies | 109.95 |
| Expenses incident to Class Organizing, Mimeographing Lectures, etc. | 639.31 |
| Total Disbursements | \$ 877.46 |
| Cash balance on hand July 27, 1938 | \$ 511.83 |

Report of the Committee on Medical Economics
TO THE HOUSE OF DELEGATES:

Your Committee on Medical Economics submits the following report on certain matters brought to its attention during the past year. Some of the questions raised are of unusual importance. It is hoped that each member of the Society will go carefully over this report and be prepared to discuss the issues involved.

FARM SECURITIES ADMINISTRATION

This committee reaffirms its action in reference to the setting up of a plan for medical service to the families receiving aid from the Farm Securities Administration as recommended to the Council in January, 1938, and published in the March issue of the VIRGINIA MEDICAL MONTHLY. We recommend that the Society approve this action and authorize the individual component societies to enter into an agreement with the Farm Securities Administration along the line proposed.

THE PAPER OF DR. BAILEY

We have reviewed with care the paper presented to the Society by Dr. W. O. Bailey. Considerable factual material has been assembled by Dr. Bailey, but, since no definite recommendations are made, the committee feels that no action on this document is indicated. We recommend that this report be filed in the office of the Society in Richmond and so made available to all members of the Society.

REPLIES TO RESOLUTION

The resolution passed by this Society at its annual meeting in Roanoke, Virginia, October, 1937, relative to the proposal of Senator Lewis, was transmitted to all of the component societies. Reports from a majority of these societies have been received and in each instance the resolution was approved.

COMMUNICATION FROM THE "COMMITTEE OF PHYSICIANS"

This committee has received from Dr. John P. Peters, Secretary, a copy of certain principles and proposals on

the subject of medical care. This document emanated from a group styling themselves the "Committee of Physicians." These principles and proposals were submitted for the consideration of the Medical Society of Virginia and are herewith reproduced, together with comments of your committee on each item.

Principles

1. That the health of the people is a direct concern of the government.

We accept this only as pertaining to the care of the indigent, to the treatment of individuals whose illness constitutes a public menace, and to measures directed to the prevention of disease. We further stipulate the relative priority of the several governmental divisions; namely, local, state, and federal, in the order named.

2. That a national public health policy directed toward all groups of the population should be formulated.

This statement needs further elucidation. If it is to be interpreted literally, it would mean the intrusion of agents of the federal government into the daily lives of everyone.

3. That the problem of economic need and the problem of providing adequate medical care are not identical and may require different approaches for their solution.

This statement is accepted as being essentially correct, although solution of the economic problem would indirectly solve a large part of the problem of medical need. The incidence of disease rapidly increases as we go down the economic scale.

4. That in the provision of adequate medical care for the population four agencies are concerned: voluntary agencies, local, state and federal governments.

This statement is obviously correct. Emphasis, however, should be placed on the primary position of the local government in the governmental group and on the necessity of preserving and strengthening existing voluntary agencies.

Proposals

1. That the first necessary step toward the realization of the above principles is to minimize the risk of illness by prevention.

The principle involved here has nowhere been disputed. Unwise methods have and will be opposed. The economic factor is here of paramount importance.

2. That an immediate problem is provision of adequate medical care for the medically indigent, the cost to be met from public funds (local and/or state and/or federal).

This is largely a local problem and the degree of deficiency in medical service varies widely. Except in pauper communities, the cost should be met by the local government. Careful provision must be made to include in this group only those who are actually indigent. Pauperization of large groups of our population carries with it evils as definite and as disastrous to national welfare as do certain deficiencies in medical care.

3. That public funds should be made available for the support of medical education and for studies, investigations and procedures for raising the stand-

ards of medical practice. If this is not provided for, the provision of adequate medical care may prove impossible.

The intrusion of the federal government into the field of medical education is objectionable and can only lead to political control. This is in no way comparable to state-supported medical departments in state universities. It should also be emphasized that other factors besides a free flow of funds are concerned in the problem of raising the standards of medical practice and in promoting medical education.

4. That public funds should be available for medical research as essential for high standards of practice in both preventive and curative medicine.

This may be agreed to provided it does not involve federal subsidy and consequent control of voluntary agencies now operating. Federal funds cannot be accepted without sacrificing an agency's fundamental independence.

5. That public funds should be made available to hospitals that render service to the medically indigent and for laboratory and diagnostic and consultative services.

This can be accepted in principle with the provision that these funds be largely furnished by the local government. Federal grants would tend to build up certain favored medical centers and would be dictated by political consideration rather than by actual needs.

6. That in allocation of public funds existing private institutions should be utilized to the largest possible extent and that they may receive support so long as their service is in consonance with the above principles.

Voluntary institutions should certainly be utilized to the fullest. In order to pass on the merit of this proposal, detailed information as to the plan should be available. It is absolutely necessary to preserve the independence of the voluntary institution and political control must be avoided. It is worthy of note that the federal government failed to follow this principle in providing medical care for veterans. That their independence can be preserved on the basis of federal subsidy is doubtful. One must be possessed of a childlike simplicity to believe that in distributing large sums to voluntary institutions the determining consideration would be the institutions' needs and their scientific efficiency.

7. That public health services, federal, state and local, should be extended by evolutionary process.

This proposal can be agreed to provided the order is reversed to local, state, and federal, and provided the public health service be restricted to its proper field of prevention.

8. That the investigation and planning of the measures proposed and their ultimate direction should be assigned to experts.

Investigation and planning by experts is desirable if these experts are drawn from the ranks of those who have gained familiarity with medical needs by actual experience. Direction of such a varied program cannot safely be centered in one group. The principle of local control should be maintained.

9. That the adequate administration and supervision of the health functions of the government, as implied in the above proposals, necessitates in our opinion a functional consolidation of all federal health and medical activities, preferably under a separate department.

We see no necessity or advantage in a federal department of health. There would be grave danger of political and partisan control of such a department, especially if its activities were widened to any such extent as has been advocated. To place \$850,000,000 annually in the hands of one agency, to be expended through various channels, would mean the concentration of tremendous power in that agency. Schools, research laboratories, and other beneficiaries would be anxious to secure and maintain the approval of such an agency, so that there would be a prompt and uninterrupted flow of funds into their treasuries. Anyone who believes that these organizations would preserve their independence of thought and action is lacking in fundamental knowledge of human reaction.

Your committee feels that these principles and proposals in general tend to advocate a dangerous extension of federal control in the realm of medicine. This control may be exerted directly through additional power and authority vested by law in a federal agency, or more insiduously through the power to control the grants of subsidies to schools, hospitals, and research institutions. Many of the proposals are acceptable in principle, but are so vague and general as to the method to be pursued that they cannot properly be evaluated. They represent the views of a group who are largely engaged in institutional work and who have had little contact with the situation in the general medical field.

While we readily grant the right of any individual physician to propose and advocate any course that he may deem wise, we denounce the action of a small minority group that sets itself up to speak for American medicine.

While this committee contains the names of many physicians eminent in the teaching and laboratory field, and while we do not doubt their sincerity of purpose, we do question their fitness to pontificate on this particular subject. We know of no special source of information that they possess that is not open to every intelligent physician in the United States and their actual experience and contacts, largely limited to institutional work, do not especially qualify them as experts on the subject of their declaration. Especial eminence in one field may beget a certain arrogance of opinion on other subjects that is not actually justifiable.

These so-called "rebels" had another recourse. Over one hundred thousand physicians are organized in the American Medical Association. The objects of this organization are "to promote the art and science of medicine and the betterment of the public health." Its legislative body is made up of representatives of each state and of delegates from the various sections of the scientific assembly and from the medical departments of the army, navy, and public health service. The House of Delegates of the American Medical Association is a truly representative body and it establishes and fixes the principles upon which

our national organization operates. Our Board of Trustees is made up of a group of earnest and able men who are just as wise, just as experienced, and just as conscious of their obligation to society as any group that may be called together. They devote, during their term of service, a large part of their time to working out the plans and policies of our association. We feel that the proper approach of these gentlemen of the committee should have been through the channels of their local and state societies and the American Medical Association.

In support of these views we submit the following resolutions:

WHEREAS, the "Committee of Physicians" has submitted to the House of Delegates of the Medical Society of Virginia certain principles and proposals on the subject of medical care; and

WHEREAS, the contents of this document have been reviewed and our opinions set forth in the above discussion; therefore,

BE IT RESOLVED BY THE HOUSE OF DELEGATES OF THE MEDICAL SOCIETY OF VIRGINIA, duly assembled at Danville, Virginia, on the ----- day of October, 1938, that we endorse this report of our Committee on Medical Economics concerning these principles and proposals; and

BE IT FURTHER RESOLVED, that a copy of these resolutions be sent to Dr. John P. Peters, Secretary, "Committee of Physicians," a copy to the Board of Trustees of the American Medical Association, and a copy to the secretary of each state medical society.

THE NATIONAL HEALTH CONFERENCE

Your committee has been gravely concerned over the trend towards state medicine. We use the term "state medicine" advisedly since a strong effort is being made to extend the power of the federal government to every part of the medical field. The so-called National Health Conference that met in Washington in July, has recommended a program of federal expenditure of \$850,000,000 per year for medical care. This figure represents a sum in excess of the combined net incomes of all of the physicians in the United States and is more than a fourth of all the money expended by the people of the United States for medical care. It is about equal to the total amount paid for hospital care throughout the entire country, plus the total amount expended for new hospital construction. While the details of this program have not been set forth, it is expected that this vast sum will be controlled and expended through some agency of the federal government and it is probable that a portion of it will be doled out to the state on conditions that will necessitate large additional state appropriations.

While your committee is fully conscious of the desirability of extending medical care to all those that are in need of such care, we are persuaded that the preservation of medical freedom is of more importance to the present and future welfare of our people than any other consideration.

We are opposed to the recommendation of the National Health Conference for the following reasons:

1. That no grave national emergency exists from the standpoint of need for medical service. The statement

that one-third of our population is without proper medical care is contrary to common knowledge and cannot be supported by actual figures based on any adequate survey.

2. That we deny the health of the individual is a concern of government except in so far as that individual's state of health menaces the general welfare. Provision should be made for the medical care of the indigent sick by local governments, supplemented in certain poor communities by state or federal aid.

3. That government is properly concerned with public health measures that have to do with the prevention and control of communicable diseases. Most of these measures can best be directed by local government units; certain ones by the individual states; and a few by the federal government. In certain instances international cooperation is required. It is our firm conviction that the line of demarcation between the functions of these several political units should be preserved and that the concentration of preventive health work in Washington would be disastrous in its consequences.

4. That we are satisfied the creation of a huge fund, to be controlled and expended by an agency of the federal government for medical education, endowment of research institutions, preventive medicine, medical relief work, and the subsidizing of practitioners, would destroy medical independence and, eventually medical progress. In an undertaking so vast, political influence would soon become paramount. This influence would make itself felt not only in those departments concerned in the distribution of medical service, but in public health projects, teaching institutions and research laboratories. We do not believe that there is any individual or any agency capable of administering so large a trust, or with ability sufficiently great to enable him or it to see and understand the various factors that enter into the problem of disease prevention and medical care throughout the entire country. One might consider the policy followed in the expenditure of great sums by the federal government in providing medical care for veterans. Hundreds of millions of dollars were spent on the construction of new hospitals at a time when forty per cent of the general hospital beds in the country were vacant. We do not believe that anyone would attempt to assert that the medical care provided in these hospitals is superior to the service attainable in the standardized general voluntary hospitals or that the service is rendered at any less cost. The expenditure by the federal government of additional great sums in hospital construction would further demoralize existing hospitals. It can safely be forecast that the location of such hospitals would be based on consideration of political expediency, rather than on enlightened and honest opinion as to medical need.

BE IT THEREFORE RESOLVED by the House of Delegates of the Medical Society of Virginia, duly assembled in Danville, Virginia, on the ----- day of October, 1938, that for the reasons outlined above, we are unalterably opposed to the proposal and recommendation of the so-called National Health Conference, and that we call upon our representatives in the Congress of the United States to oppose by every means in their power the enactment

of any legislation by Congress that would give these proposals the force of law.

BE IT FURTHER RESOLVED that a copy of these resolutions be sent to each of our representatives in Congress and that each of them be invited to convey to us his own attitude towards these proposals.

BE IT FURTHER RESOLVED that a copy of these resolutions and the preliminary discussion be sent to the secretary of each state medical society and to the Board of Trustees of the American Medical Association.

A STUDY OF MEDICAL CARE

We endorse the plan of the American Medical Association for the study of medical care. This study is already going forward in many states. We feel that it is of primary importance, in view of the various proposals for extending medical care, that are now before the American public and that are touched on in other parts of this report, that an adequate survey of actual needs be made. This can only be accomplished by the active cooperation of every component society. While the execution of this plan may present considerable difficulty, no greater service could be rendered our profession and our country than the securing of basic data bearing on the real need of medical care and the provisions now existing for meeting that need.

WE, THEREFORE, RECOMMEND that the House of Delegates endorse this plan and direct the secretary of the Society to distribute the necessary information and literature to the component societies.

WE FURTHER RECOMMEND that the correlation of this information for the State of Virginia be assigned to the Committee on Medical Economics.

WE FURTHER RECOMMEND that the Committee on Medical Economics be increased from three to five.

GROUP HEALTH ASSOCIATION

We condemn the action of the Home Owners Loan Corporation in organizing the Group Health Association, Incorporated, in Washington. We recommend that our senators and congressmen be requested to look into the legality of the action of the Home Owners Loan Corporation in diverting \$40,000 of government funds for this purpose.

ADVERTISING OF PROPRIETARY REMEDIES AND APPLIANCES

A letter from the Reverend H. H. Smith, of Ashland, Virginia, directed to Dr. I. C. Riffin, was referred to the committee. The Reverend Smith points out the fraudulent nature of the claims set forth in the advertisements of many so-called patent medicines and of various appliances designed to aid the hard-of-hearing. He especially notes the frequently with which these advertisements appear in religious papers and requests that we make some comment on this situation.

We, therefore, submit the following resolutions:

WHEREAS, certain papers and periodicals carry many advertisements of so-called proprietary remedies and appliances; and

WHEREAS, many of the claims made in these advertisements are fraudulent in whole or in part; and

WHEREAS, this may and does result in great harm to the health and welfare of many individuals who are de-

ceived by the claims made in these advertisements; therefore,

BE IT RESOLVED BY THE MEDICAL SOCIETY OF VIRGINIA that we condemn such advertisements and the offering for sale of such remedies and appliances; and

BE IT FURTHER RESOLVED, that we request the management of these various papers and periodicals to be guided by an enlightened conscience in accepting advertisements for drugs, remedies, and appliances, and that before accepting such advertisements they secure information from readily available sources as to the soundness of the claims made in such advertisements.

Committee:

GUY R. FISHER,
JOHN A. GIBSON,
WALTER B. MARTIN, *Chairman*.

Report of Membership Committee

TO MEMBERS OF THE HOUSE OF DELEGATES:

The duties of this Committee are rather limited but we do have one privilege of which we wish to avail ourselves—that of making recommendations for honorary membership. In recognition of service to our organization, we wish to propose for this the name of the retiring president, Dr. G. F. Simpson.

The By-Laws also provide that this Committee shall see that obituary notices are prepared for deceased members. As far as we have been advised, these have appeared in the various issues of the MONTHLY.

ISAAC PEIRCE,
J. BOLLING JONES,
J. A. WHITE, *Chairman*.

Report of Committee on Ethics

Your Committee on Ethics has had little referred to them for consideration during this year, except the communication on "The Woods," ordered referred to our committee by the House of Delegates at their meeting last year. This committee is of the opinion that there is a great deal of logic in Dr. Hiden's discussion, and that the family of Woods as listed by him is quite large; however, your committee feels there is nothing they can do unless the Component Society bring charges and appeal to this committee.

This committee was asked to pass upon the qualifications of one of its members to take the examination of The American Board of Orthopaedic Surgery. Upon investigation it was found that he was a member in good standing in his local society and that he was a member in good standing with the Medical Society of Virginia with his dues paid through 1937. He was, therefore, recommended to take this board.

Respectfully submitted,

PERRY W. MILES,
G. H. CARTER,
W. D. KENDIG, *Chairman*.

Report of the Advisory Board to the Woman's Auxiliary

Our efficient and very active President, Mrs. James B. Stone, will give a detailed account of the activities of the

Auxiliary in her annual report to the President and House of Delegates of the Society. It remains, therefore, for us to touch on only the high spots, with words of commendation and encouragement, and, if possible, to point the way to still greater things.

If the members of the Medical Society would read the report of the Woman's Auxiliary in our JOURNAL each month, and see what the various local chapters are doing, they would realize what a great adjunct the Woman's Auxiliary is to the life and progress of our Society. We read and discuss our scientific papers at our local or component societies, while they are pulling off some card party or other entertainment to send some poor patient to the Tuberculosis Sanatorium or to help some poor waif get in a hospital for a necessary operation. We never attend one of their Auxiliary meetings that we do not hear them offering their services to the Society in any way possible.

To enumerate a few of their activities during the year: most of the organized groups, or chapters, have centered their interests around tuberculosis work, not only maintaining a bed at Blue Ridge Sanatorium, but several local chapters have also done magnificent work in maintaining beds at their local tuberculosis sanatoria. They are also doing other valuable work in furnishing their local hospitals with linen and other hospital supplies, to say nothing of outside work in the promotion of health education, the control of cancer, and, in spite of the fact that this Society has never outlined any special work in the fight against venereal disease, one county unit has taken as its special work the fight against this scourge.

We are very grateful to learn from President Stone, who attended the Auxiliary meeting of the American Medical Association in San Francisco, that the work of our Auxiliary compares favorably with that of any part of the United States.

While the chapters we have are active, we haven't enough of them. We have ten or eleven units, with a membership of about two hundred and fifty. Many communities, it would seem, need them if only they could be started.

In view of the great extension work these unselfish women are doing, we, the Advisory Council of the Woman's Auxiliary, recommend that the Society encourage them in every way possible, and aid them all we can in organizing new units.

JAMES B. STONE,
FREDERICK GOCHNAUER,
P. ST. L. MONCURE, *Chairman*.

Report of the Child Welfare Committee

TO THE PRESIDENT AND MEMBERS OF THE HOUSE OF DELEGATES:

The present status of Child Welfare in Virginia, while far from satisfactory, gives promise of steady improvement in the immediate future.

A wide-awake Health Department and an enlightened public are cooperating to provide better facilities in almost every phase of public health work. Especially is this true in the domain of child care.

There seems to be a greater disposition on the part of those who control the financial agencies of government to make more adequate provision for the care of children.

This is evidenced by the interest of the State Legislature and by the activities of the Children's Bureau of the Department of Labor. While some of us may question the wisdom of the authority vested in the federal government in the distribution of funds for Child Welfare, all will admit that the need is great, that it has not been adequately met, and will welcome such provision for the care of children as may be forthcoming. To quote from the report of this Committee for the year 1937—"Child Welfare work in the State is now largely a matter of providing the financial support necessary to properly prosecute the functions of existing agencies."

The recent Legislature made an appropriation of \$75,000 to be used by the Department of Education for "Special Classes" for children handicapped in one way or another. Some of this will be used for the detection (by use of the audiometer) of those who are hard of hearing, for vocational training, and for other purposes connected with the training of the mentally or physically handicapped. Your Committee gave to the Department of Education its active support in this matter.

Since 40 per cent of children entering the first year of school fail to be promoted, it is highly desirable that more funds be available for kindergarten work. Because the mentally retarded children begin to drop out of school work after the fourth grade, it would be the part of wisdom to provide vocational training for children from fourteen years up. Dr. Sidney B. Hall, Superintendent of Public Instruction has repeatedly emphasized these needs and is planning to meet them.

Feeble-Minded.

Additional funds were provided for the care of the feeble-minded, but the amount appropriated is entirely inadequate. For the first time the State is making provision for colored feeble-minded boys and girls.

Tuberculosis.

For tuberculosis, the Legislature increased the amount for subsidizing hospital beds by \$16,000—a total of \$50,000 now being available for this purpose. To meet the need adequately there should be a fund of about \$168,000.

The Legislature also made a "conditional" appropriation of \$142,500 for the purpose of providing 260 additional beds at the various State Sanatoria. If this "conditional" appropriation becomes available there will be beds provided for Negro children at Piedmont Sanatorium, whereas now there are none. There will also be additional beds for children at the other sanatoria. This marks a distinct advance in the care of tuberculous children. Your Committee has used its efforts to encourage the expenditure of the "conditional" appropriation.

It is the sense of the Committee that X-ray examination of the chest should be a part of the physical examination of all teachers applying for kindergarten, grammar grade, or high-school work thus protecting children from another possible source of tuberculous infection.

MATERNAL AND CHILD HEALTH.

The Maternal and Child Health Bureau is extending its work as fast as funds are available and new Health Units are established.

The State appropriation for Maternal and Child Health work in Virginia for the fiscal year beginning July 1, 1938, is \$43,400, the federal appropriation is \$95,062.97. There are now twenty-nine full-time health departments giving full-time health work to forty-seven counties of the State.

Sixty-three Maternal and Child Health Clinics were in operation at the end of the fiscal year ending June 30, 1938. In excess of 35,000 patient visits were made to those during the year. Of these:

Forty-three per cent were prenatal or postnatal cases.

Forty-two per cent were infants.

Fifteen per cent were pre-school children.

Services to the pre-school child should be increased where possible.

Over \$5,000 was expended for antiluetic drugs for mothers and children treated in the Clinics. This is in addition to the syphilis work carried on elsewhere in the general Syphilis Clinics.

THE BLIND.

Additional appropriations have been made for the care of the blind, \$66,000 annually being now available. This is sufficient increase to provide an additional nurse but does not permit the employment of a second ophthalmologist, though another is urgently needed.

DEPENDENT CHILDREN.

There are approximately 40,000 dependent children in Virginia; 10,000 of these may be said to be "destitute."

There are now ninety-three County Welfare Superintendents.

State and federal appropriations are doing much to relieve the distress among the underprivileged.

The industrial schools for white and the colored boys and girls have received increased appropriations.

"MISSION" SCHOOLS AND PRIVATE SCHOOLS.

There are in Virginia many private religious and non-sectarian schools.

In some of these schools the Committee is informed sanitary conditions are not satisfactory. Except on complaint neither the State Department of Health nor the State Department of Public Welfare has authority to make inspections.

It is the feeling of the Committee that such a situation should not obtain.

In pursuance of the above report your Committee makes the following recommendations:

(1) That the Society request the State Department of Public Instruction to make compulsory, with physical examination, the filing of a report on X-ray examination of the chest of each person applying for a position as teacher in the Kindergarten, Grammar or High Schools of the State.

(2) That such steps be taken as may be necessary to in-

sure legal periodic inspections of the private sectarian or non-sectarian schools of the State.

Respectfully submitted,
Child Welfare Committee,

J. B. STONE,
W. B. McILWAINE,
J. M. BISHOP,
E. C. HARPER,
C. E. CONRAD,
R. D. BUTTERWORTH,
R. D. BATES,
L. T. ROYSTER,
F. D. WILSON, *Chairman*.

Report of the Walter Reed Memorial Commission

The Walter Reed Memorial Commission begs leave to report a good physical condition of the birthplace of Walter Reed, Belroi, Virginia, and that the "shrine" is more popular with the years. The grounds have been improved and it is contemplated that some shrubbery and flowers in keeping with the period be cultivated and a general improvement of the premises be made. The Commission again thanks the Gloucester Woman's Club for acting as caretaker, thus saving this item of expense all through the years.

In addition to renewing the fire insurance on the house, our Committee asks for an appropriation of \$50.00, or as much thereof as becomes necessary, to care for up-keep and improvements to the property during the coming year.

J. D. CLEMENTS,
M. H. HARRIS,
CLARENCE PORTER JONES,
Chairman.

Report of the Committee to Arrange a Program for the Health Division of the Virginia Conference of Social Work

This Committee, after several conferences with the officers and general program committee of the Virginia Conference of Social Work, arranged the following program:

Medical Care for the Indigent in the City—Dr. E. Le-Roy Kellum, Richmond.

Medical Care for the Indigent in Rural Areas—Dr. A. M. Showalter, Christiansburg.

Medical Service Bureau—Dr. Carrington Williams, Richmond.

Problems in Medical Care, as seen by the Public Health Nurse—Miss Katherine Wheeler, Pulaski.

Problems in Medical Care, as seen by the County Superintendent of Public Welfare—Miss Emily Janney.

Program of the Virginia Tuberculosis Association—H. Laurie Smith, Richmond.

Pneumonia Control—Moving Picture—Dr. G. F. McGinnes, Richmond.

The Chairman of this Committee acted as Chairman of this Section of the Conference. The meeting was well attended and the papers brought forth some interesting discussions.

This Committee feels that the Medical Society of Vir-

ginia should continue to cooperate with the Virginia Conference of Social Work.

Respectfully submitted,
P. W. MILES,
W. P. JACKSON,
D. C. WILSON,
F. P. FLETCHER,
BASIL JONES, *Chairman*.

Report of the Virginia Pneumonia Commission

Contrary to the predictions made in the last report of this Commission and to the assurances given by the State Commissioner of Health, the Legislature at its last meeting failed to appropriate money for pneumonia control in the State of Virginia, although the need for such an appropriation had been vigorously presented to the Governor and to his Budget Committee. Because of this deficiency the Commission authorized its Chairman to write the Commissioner of Health in Virginia suggesting that an attempt be made to secure federal funds with the hope that a State appropriation might follow at a later date.

The State Epidemiologist, Dr. G. F. McGinnes, is now prepared to certify to the Medical Society of Virginia laboratories in the State which are equipped to type sputum for pneumococci, and the laboratories of the State Department of Health are in a position to offer special training to technicians desiring to learn pneumococcus typing. For the time being typing specific antipneumococcus serum can be secured at cost from the Board of Health. There is no provision yet for its free distribution to the indigent.

Your Commission wishes to urge that the component medical societies throughout the State devote one meeting a year to a consideration of pneumonia and that they severally outline plans whereby their influence may be brought to bear upon local delegates to the General Assembly at its next meeting in favor of a State appropriation for pneumonia control.

WALTER B. MARTIN,
H. B. MULHOLLAND,
PHILIP S. SMITH,
HARRY WALKER,
WYNDHAM B. BLANTON, *Chairman*.

Report of Committee to Confer with State Board of Nurses' Examiners

As chairman of the Committee to confer with the State Board of Nurses Examiners, I will state that I have no report and have not convened the committee because there has been no request from the nurses for such a meeting.

W. LOWNDES PEPLE,
Chairman.

Report of the Committee on Syphilis Control TO THE PRESIDENT AND HOUSE OF DELEGATES:

The Committee reports:

1. At its winter meeting the Council of the Society was requested by this Committee to forward copies of the Resolutions regarding Syphilis Control adopted at the 1937 meeting of the Society to the following:

1. State Health Commissioner.
2. Director of the State Budget.

3. Chairmen of the several legislative committees in the House of Delegates.

2. The activities of the State Health Department in the Control of Syphilis have advanced along orthodox lines and the progress has been eminently satisfactory in view of the available appropriations. A summary of these activities prepared by Dr. Otis L. Anderson is attached as an appendix to this report.

The Committee makes the following recommendations:

1. *Regarding the Present Program of the State Health Department.*

The Committee endorses syphilis program as it is being conducted by the State Health Department and urges that every effort be made to secure increased appropriations to further the work outlined.

2. *Regarding a Premarital Examination Law.*

The Committee has reviewed this problem and studied the existing laws and experiences of other states. It appears that a few states adopted laws rather hurriedly and revision will be necessary. Several phases of this problem need careful consideration.

Several states made no provision for allowing an unmarried pregnant female with syphilis to secure a marriage license. The New York and Connecticut laws allow judicial authority to waive the examination requirement when necessary.

Some states require that applicants for marriage license be "Free from venereal disease," without making provision for non-infectiousness. This, if enforced, would be rather stringent. Other states allow a license to be issued if the disease is not in a communicable stage. No attempt has been made to establish criteria of communicability. Such criteria could hardly be included in a law. However, an attempt at uniformity could be made by having either the State Health Department or the State Medical Society recommend an outline for evaluating the effect of various factors, such as, duration of infection, amount, continuity and type of treatment on communicability.

Other factors, such as the time intervals between examination and issuance of license and between date of license and date of marriage, need careful consideration.

Since a state law cannot be considered by the State Legislature until 1940, this Committee recommends that it be instructed to study the experience of other states for another year and report to the Society at the fall meeting in 1939.

3. *Regarding a Law Requiring Blood Tests in Pregnant Women.*

New York and New Jersey have passed laws requiring serological tests on pregnant women. The Committee recommends that the experience be observed during the coming year and that the question be deferred until the 1939 meeting.

4. *Regarding a Law Requiring Serological Tests of Food Handlers.*

The Committee does not consider Food Handlers an important source of syphilitic infections. As a case-finding procedure other epidemiological procedures are consid-

ered more efficient. The Committee does not recommend such a law.

Committee on Syphilis Control,
DUDLEY C. SMITH,
RAYMOND D. KIMBROUGH,
EDWIN E. BARKSDALE,
ENNION S. WILLIAMS, *Chairman*.

APPENDIX TO REPORT OF COMMITTEE ON SYPHILIS CONTROL

Dr. Otis L. Anderson, Director of the Division of Venereal Disease Control, State Health Department, gives the following summary of the activities of that Department for 1937 in the control of venereal diseases:

In December, 1936, the Virginia State Department of Health established a Division of Venereal Disease Control. The activities of this Division are administered by a full-time director and an associate director. They are charged with the responsibility of studying the venereal disease problem in Virginia and formulating a plan for the control of these diseases.

The first procedure was to define the problem. It was realized that such a definition would vary in the forty-eight states, as well as the several sections of Virginia, because of the variation in the social, economic and racial distribution in the population. Analyses of reliable studies have demonstrated the preponderance of syphilis and gonorrhea as occurring in the lower social and economic levels. The rate of infection in the colored race is considerably higher than that in the white race, and is quite probably due to the fact that more Negroes in proportion to the total population in any given community as compared with the white race, fall in the lower brackets. Therefore, the extent of the problem is greater in the Southern States.

The census estimate in July, 1930, revealed the total population to be 2,425,000—white 1,774,000 and colored 651,000. Therefore, 36.6 per cent of Virginia's population is colored and the distribution of this race in the State is important from the standpoint of the prosecution of more intensive control activities in the several communities where the colored population is relatively greater.

The percentage of the State colored population in cities and counties is greater in the southeastern section of Virginia. Seven counties contain over 2 per cent; namely, Pittsylvania, Halifax, Mecklenburg, Southampton, Nansemond, Norfolk and Accomac. Further, the problem of any community depends upon the percentage of the colored population of the county. In six counties the colored population is 60 per cent or over. They are: Charles City, Dinwiddie, Surry, Sussex, Greensville and Southampton.

Inasmuch as the morbidity reporting for syphilis and gonorrhea in Virginia is far from complete, an attempt to evaluate the prevalence of these diseases was based on the several serological surveys that were conducted in the past five years. From these surveys it was learned that approximately 5 per cent of the white race and 15 per cent of the colored race were infected. Applying these percentages to the State as a whole, we estimate there are 180,000 cases of syphilis, of which approximately 90,000 cases exist in the white and a similar number in the colored

race. No attempt was made to establish the rate of infection for gonorrhea beyond crediting authoritative statements, which revealed gonorrhea to be from three to six times more prevalent than syphilis.

From information obtained from our State mental hospitals, 264 cases of syphilis were admitted to these institutions in 1937. This averaged 7.9 per cent of all admissions to the five institutions for the year. In addition, it cost the State of Virginia \$112,233.62 to maintain this group of syphilitics for the year 1937.

In order to collect information bearing on the facilities available for the treatment of venereal diseases in Virginia, a questionnaire was sent to 104 hospitals and allied institutions. Ninety-six (92 per cent) responded. Of the 104 institutions, sixty-seven are general hospitals and twenty-nine limit admissions to certain diseases. The following information was obtained:

Forty-three admit patients with syphilis and gonorrhea in the acute infectious stages.

Twenty-three operate out-patient venereal disease clinics, of which nineteen treat syphilis and gonorrhea, three treat syphilis only, and one gonorrhea only. Fifty-eight employ a routine blood examination for syphilis on all admissions.

Thirty-nine operate laboratories in which serological tests for syphilis are performed.

Twenty-seven perform dark-field examinations.

In addition to the twenty-three venereal disease clinics operated by these institutions, there were on January 1, 1937, nineteen clinics operated by health departments, medical societies, and civic organizations. Since that time this type of clinic has been increased from nineteen to fifty-four. Therefore, there are now seventy-seven clinics available throughout the State.

An analysis of the fifty-four clinics shows the following activities from June through December, 1937:

| | |
|---|---------|
| Number of new cases of syphilis admitted..... | 5,104 |
| Number of new cases of gonorrhea admitted | 685 |
| Number of treatments given: | |
| Arsphenamines | 58,288 |
| Bismuth | 42,060 |
| Gonorrhea | 4,588 |
| <hr/> | |
| Total | 104,936 |
| Total clinic visits | 120,177 |
| Follow-up visits: | |
| To contacts | 5,760 |
| To delinquents | 18,365 |
| <hr/> | |
| Total | 24,125 |
| Number of blood tests | 39,584 |
| Number of dark-field examinations | 358 |

The plan for a venereal disease control program in "State and local health departments" as recommended by the Advisory Committee to the United States Public Health Service, was adopted as a guide in the formulation of a program in Virginia. This program embraces a ten-point plan; namely, 1. Educational program for the laity. 2. Improving the efficiency of present treatment facilities and the creation of new facilities. 3. Emphasize and popu-

larize standardized treatment procedures. 4. Distribution of free antisyphilitic drugs for all cases of syphilis. 5. Improvement of laboratory facilities. 6. Epidemiology to assume a more important role in the plan. 7. A consideration of morbidity and mortality reports. 8. Educational program for the profession. 9. The development of diagnostic centers. 10. Prophylaxis.

It was realized that all the features set forth in this brief outline could not be developed until additional State and federal funds became available. Certain portions of the projected program were undertaken during the year 1937.

1. EDUCATIONAL PROGRAM.

a. Laity.

Informative pamphlets and bulletins were secured for distribution.

Addresses, sound motion picture demonstrations and radio talks were presented.

Preparation of material for newspaper publicity.

Consultation with local governing bodies, civic organizations and other interested citizens regarding the need and plan to be followed in creating a control program for the community.

b. Professional.

Presentation of papers.

Addresses and motion picture demonstrations before medical societies and unorganized groups of physicians.

Preparation and distribution of informative material relating to the diagnosis, treatment, current progress, and other pertinent facts concerning the control of venereal diseases.

Consultation with the official committee of the Medical Society of Virginia, local medical societies, and unorganized groups as to ways and means of creating and promoting additional treatment facilities as well as other control measures.

2. TREATMENT FACILITIES.

In December, 1936, there existed nineteen venereal disease clinics in the State. Through our cooperation and consultation with such groups as medical societies, civic organizations, private groups of physicians, and local health officers, this number has been increased to fifty-four. A suggested outline of procedure in the organization of clinics and standards to be maintained has been distributed to the aforementioned groups.

3. STANDARDIZED TREATMENT.

Mimeographed copies of standardized treatment procedures, as recommended by the Cooperative Clinical Group, were prepared and distributed to the profession. The desirability of adhering to this recommended type of treatment was emphasized at all meetings of medical groups. A delayed dark-field service was established in order to facilitate early diagnosis and treatment of syphilis. Standardized treatment has been recommended, and later will be made a requirement in all venereal disease clinics in the State.

4. DISTRIBUTION OF ANTISYPHILITIC DRUGS.

The distribution of antisyphilitic drugs at cost to the medical profession was undertaken in 1925 and this method of distribution has been continued. Through funds made available in the Bureau of Maternal and Child Health, free drugs have been furnished for the past two years for the treatment of cases of prenatal and congenital syphilis who receive their treatment in indigent and prenatal clinics approved by this Bureau. It is proposed that free drugs will be distributed to physicians and clinics for the treatment of syphilis upon the allotment of adequate funds for this purpose.

5. LABORATORY FACILITIES.

Two additional scientific workers were employed in the laboratory because of the tremendous increase in specimens submitted for serologic examination. A delayed dark-field service was established in April, 1937. All physicians in the State received notice of this new service as well as a reprint of the bulletin prepared by the United States Public Health Service entitled "Delayed Dark-field Examination," by Doctors J. F. Mahoney and K. K. Bryant. This same service was established in May, 1938, in our branch laboratory at Abingdon and will also be inaugurated in the Luray laboratory on or about July 1, 1938. A plan is being prepared whereby a comparative study may be conducted in all laboratories, private and otherwise, in the State for the purpose of establishing their rating of such serologic tests for syphilis as they perform.

6. EPIDEMIOLOGY.

Bulletins and pamphlets dealing with the methods and procedures to be followed in epidemiological investigation of venereal disease cases have been distributed to health officers, public health nurses and venereal disease clinics. Through consultation and advice, improved contact investigation and case holding have been added as regular services in many of our clinics. Data has been accumulated relating to the routine employment of serologic tests for syphilis as done in all the hospitals in Virginia. A new morbidity reporting form used by private physicians includes certain features which are of very definite value in locating contacts and in maintaining patients under treatment. This is a service rendered to the physician by the local health officer.

7. MORBIDITY AND MORTALITY.

a. Morbidity.

A new reporting form was prepared and distributed to the profession for their use on January 1, 1938.

b. Mortality.

Through the cooperation of the Bureau of Vital Statistics, a stillbirth reporting form was prepared and adopted for the use of the profession. This is also of value in the control of venereal diseases through its employment in epidemiological investigation of reported cases.

The outlook for the activities of the Division of Ve-

nereal Disease Control for the fiscal year beginning 1938, is gratifying. The General Assembly appropriated for each year of the biennium \$11,915 and the United States Public Health Service has allotted \$58,983.

The distribution of free antisiphilitic drugs to physicians, clinics, and hospitals for the treatment of all cases of syphilis, regardless of their financial status, will be the next step in the control program. This new service will be available on or about September 1, 1938.

Report of Representative to the Virginia State-Wide Safety Conference

Having been appointed by President Simpson to represent the Society at the Fourth Annual State-Wide Safety Conference held at the Monticello Hotel, Norfolk, June 3 and 4, 1938, I wish to submit the following report:

The Conference, called by the Governor of Virginia in the interest of developing a deeper interest in the conservation of human life, and elimination of sorrow, distress, and economic waste due to accidents, most of which are preventable, was attended by several hundred representatives from various organizations, railroad companies, large and small manufacturing companies, mining companies, telephone companies, the U. S. Army, Navy, and Coast Guard, Department of Labor, life insurance companies, rubber and other insulating companies, and many others.

The keynote speech of the meeting was one delivered by Judge John Gutknecht, Judge of the Municipal Court, Chicago, Illinois, his subject being "Safety and Judicial Responsibility." Two of the outstanding recommendations, based on successful ruling in his court, were: to fine everyone for exceeding the speed limit, without exception, regardless of race, color, male, female, adult, minor, drunk or sober; not to put the burden of whether the driver of the car was drunk, or not drunk, on the physician,—that it was a hard question to decide anyhow, often embarrassed the physician, and put him in a bad light. He said also it was an excellent thing to bring women actually into court—not to allow them to send their fathers, brothers, husbands, boy-friends, or attorneys, to represent them. Another recommendation was to do away with the ticket system, 90 per cent of which, in former times in Chicago, had been torn up by the mayor, the judge, or some higher up, the next morning. In other words, when a man who was arrested knew that through some influence—political or otherwise—he had only one chance in ten of being fined, he would be apt to be more careless.

There were many more excellent talks and demonstrations. Several sections on different subjects were going on at the same time. The exhibits and their demonstration were most interesting and instructive.

I think these conferences—so vital to us all, and especially instructive to all physicians and surgeons—should have representation from our Society each year, preferably in the form of a committee, to bring in a report to this Society. Possibly such a committee should be given power to act in the name of the Society, with the other various agencies,

in the matter of prevention of accidents, and doing our part in saving life and limb.

P. ST. L. MONCURE.

Delegates to the Danville Meeting

Of the Medical Society of Virginia, whose names have been reported are given below:

| <i>Delegate</i> | <i>Society</i> | <i>Alternate</i> |
|-------------------------------|----------------|-----------------------|
| ACCOMAC | | |
| Dr. W. M. Burwell | | Dr. Rooker J. White |
| ALBEMARLE | | |
| Dr. J. C. Flippin | | Dr. A. M. Smith |
| Dr. A. D. Hart | | Dr. F. D. Daniel |
| ALEXANDRIA | | |
| Dr. H. A. Latane | | Dr. C. E. Arnette |
| ALLEGHANY-BATH | | |
| Dr. N. B. Jeter | | Dr. I. T. Hornbarger |
| Dr. J. M. Emmett | | Dr. G. A. Torrence |
| ARLINGTON | | |
| Dr. Chas. F. Kincheloe | | Dr. W. S. Blakiston |
| AUGUSTA | | |
| Dr. Guy R. Fisher | | |
| Dr. Wm. Alex. Murphy | | |
| BOTETOURT | | |
| Dr. M. S. Stinnett | | Dr. S. F. Driver |
| CHARLOTTE | | |
| Dr. J. R. Bailey | | Dr. R. B. Cralle, Jr. |
| CULPEPER | | |
| Dr. J. B. Jones | | Dr. O. K. Burnette |
| DANVILLE-PITTSYLVANIA ACADEMY | | |
| Dr. I. C. Harrison | | Dr. P. W. Miles |
| Dr. G. V. Thompson | | Dr. H. H. Hammer |
| DICKENSON-BUCHANAN | | |
| Dr. P. Q. Daniels | | |
| Dr. T. C. Sutherland | | |
| ELIZABETH CITY | | |
| Dr. Robt. H. Wright, Jr. | | Dr. Willard P. Smith |
| FAUQUIER | | |
| Dr. Martin B. Hiden | | Dr. Wade C. Payne |
| FLOYD | | |
| Dr. S. T. Yeatts | | Dr. F. C. Bedsaul |
| FOURTH DISTRICT | | |
| Dr. J. M. Habel | | Dr. J. L. Hamner |
| | | Dr. H. C. Rucker |
| Dr. C. G. O'Brien | | Dr. D. N. Twyman |
| Dr. L. A. Law | | Dr. W. C. Harman |
| Dr. E. J. Haden | | Dr. P. E. Tucker |
| Dr. N. P. Snead | | Dr. E. B. Nuckols |
| Dr. Wright Clarkson | | Dr. Ruth Mason-Grigg |
| Dr. G. M. Naff | | Dr. M. H. Tredway |
| Dr. W. D. Kendig | | Dr. K. S. Freeman |

| <i>Delegate</i> | <i>Society</i> | <i>Alternate</i> | <i>Delegate</i> | <i>Society</i> | <i>Alternate</i> |
|-----------------------|------------------------|------------------|-------------------------|-----------------------|------------------|
| Dr. W. W. Wilkinson | Dr. R. S. Montgomery | | NORTHERN VIRGINIA | | |
| Dr. J. Newton Dunn | Dr. J. A. B. Lowry | | Dr. F. C. Downey | Dr. J. M. Winkfield | |
| Dr. Wm. S. Burton | | | Dr. J. B. McKee | Dr. H. I. Pifer | |
| Dr. R. A. Moore | Dr. T. G. Hardy | | Dr. George H. Long | Dr. Virgil Hammer | |
| Dr. O. L. Jones | Dr. J. M. Bailey | | Dr. O. W. Carper | Dr. D. M. Kipps | |
| Dr. B. H. Knight | Dr. F. E. Steere | | Dr. C. H. Armentrout | Dr. John Snead | |
| Dr. T. S. Jennings | Dr. Wm. D. Prince | | Dr. C. O. Dearmont | Dr. Frank Tappan | |
| FREDERICKSBURG | | | ORANGE | | |
| Dr. R. J. Payne | | | Dr. Lewis Holladay | Dr. G. R. Elliott | |
| Dr. R. P. Woods | | | PATRICK-HENRY | | |
| Dr. W. A. Harris | | | Dr. W. N. Thompson | Dr. J. T. Shelburne | |
| Dr. G. A. Reynolds | | | Dr. J. M. Shackelford | Dr. F. B. Teague | |
| Dr. F. C. Pratt | | | PRINCESS ANNE | | |
| HALIFAX | | | Dr. Cora Z. Corpening | Dr. Ira Hancock | |
| Dr. Wm. C. Brenn | Dr. J. D. Hagood | | RICHMOND ACADEMY | | |
| HANOVER | | | Dr. M. P. Rucker | Dr. Porter P. Vinson | |
| Dr. J. A. Wright | Dr. T. E. Stanley | | Dr. K. S. Blackwell | Dr. E. T. Trice | |
| LEE | | | Dr. C. M. Caravati | Dr. Kinloch Nelson | |
| Dr. G. B. Setzler | Dr. J. B. Muncy | | Dr. A. I. Dodson | Dr. I. A. Bigger | |
| LOUDOUN | | | Dr. R. A. Nichols, Jr. | Dr. W. Ambrose McGee | |
| Dr. J. A. Gibson | Dr. W. O. Bailey | | Dr. Ennion S. Williams | Dr. E. L. Flanagan | |
| LOUISA | | | Dr. F. P. Fletcher | Dr. W. R. Jordan | |
| Dr. H. G. Byrd | Dr. H. S. Daniel | | Dr. Carrington Williams | Dr. P. D. Camp | |
| LYNCHBURG ACADEMY | | | Dr. A. E. Turman | Dr. T. Dewey Davis | |
| Dr. Ernest G. Scott | Dr. T. N. Davis | | ROANOKE ACADEMY | | |
| Dr. H. H. Hurt | Dr. Clyde Adkerson | | Dr. W. L. Powell | Dr. J. T. McKinney | |
| MID-TIDEWATER | | | Dr. F. A. Farmer | Dr. George S. Hurt | |
| Dr. A. W. Lewis | | | Dr. C. H. Peterson | Dr. L. D. Keyser | |
| Dr. R. D. Bates | | | ROCKINGHAM | | |
| Dr. J. M. Gouldin | | | Dr. J. H. Deyerle | Dr. G. G. Tanner | |
| Dr. James W. Smith | | | RUSSELL | | |
| Dr. V. E. Stiff | | | Dr. W. C. Elliott | | |
| Dr. John R. Gill | | | SCOTT | | |
| Dr. M. H. Eames | | | Dr. W. O. Pollard | Dr. O. E. Bevins | |
| Dr. Clarence Campbell | | | SOUTHAMPTON | | |
| Dr. L. O. Powell | | | Dr. G. H. Quillen | Dr. Jack Grizzard | |
| NANSEMOND | | | SOUTHWESTERN | | |
| Dr. O. R. Yates | Dr. B. L. Holladay | | Dr. A. B. Greiner | Dr. E. M. Chitwood | |
| NELSON | | | Dr. R. D. Campbell | Dr. A. B. Graybeal | |
| Dr. Homer E. Clarke | Dr. S. G. Miller | | Dr. James P. King | Dr. R. H. Grubbs | |
| NORFOLK | | | Dr. H. R. Farley | Dr. H. B. Brown, Jr. | |
| Dr. Walter B. Martin | Dr. Wm. B. Newcomb | | Dr. J. Glenn Cox | Dr. W. A. Porter | |
| Dr. Frank H. Redwood | Dr. C. Carroll Smith | | Dr. E. S. Carr | Dr. L. B. Lowe | |
| Dr. N. G. Wilson | Dr. W. P. McDowell | | Dr. E. E. Epperson | Dr. G. Hunter Wolfe | |
| Dr. N. F. Rodman | Dr. A. Brownley Hodges | | Dr. Alex. Chaffin | Dr. V. O. Choate | |
| Dr. P. St. L. Moncure | Dr. C. Lydon Harrell | | WILLIAMSBURG-JAMES CITY | | |
| NORTHAMPTON | | | Dr. E. T. Terrell, Jr. | Dr. A. M. Sneed | |
| Dr. J. M. Lynch | Dr. W. C. Henderson | | NORTHERN NECK | | |
| Dr. V. L. Litsinger | Dr. J. H. Hare | | Dr. V. L. Litsinger | Dr. J. H. Hare | |
| Dr. R. E. Booker | Dr. L. E. Cockrell | | Dr. R. E. Booker | Dr. L. E. Cockrell | |
| Dr. E. T. Ames | Dr. Chas. Y. Griffith | | Dr. E. T. Ames | Dr. Chas. Y. Griffith | |
| Dr. Lee S. Liggan | Dr. E. R. Moorman | | Dr. Lee S. Liggan | Dr. E. R. Moorman | |

It is hoped that societies which were unable to report in time to have their delegates listed, may yet appoint them and send names to the executive secretary-treasurer, at 1200 East Clay Street, Richmond.

PROGRAM

(PRELIMINARY)

MEDICAL SOCIETY OF VIRGINIA

Sixty-ninth Annual Session

Danville

October 4, 5 and 6, 1938

HOTEL DANVILLE—*Headquarters*

SCIENTIFIC PROGRAM

GENERAL SESSION

Tuesday, October 4

8:00 P. M.

Ballroom, Danville Hotel

Call to Order—I. C. HARRISON, M.D., General
Chairman, Committee on Arrangements.

Invocation—REV. FRED R. CHENAULT, D.D.

Address of Welcome—JUDGE KERR MOREHEAD
HARRIS.

Announcements.

Address of President—G. FRANKLIN SIMPSON,
M.D., Purcellville.

Memorial Hour.

Address—The Diagnostic Value of the Clinical
Aspects of Digestive Disease—WILLIAM J.
MALLORY, M.D., (*Invited Guest*) Washington,
D. C.

MEDICAL AND SURGICAL SESSIONS

Wednesday, October 5

9:00 A. M.

Medical Section—Ballroom, Danville Hotel

Nutritional Deficiency Disease with Special Refer-
ence to Vitamin B Deficiency.

OSCAR L. HITE, M.D., Richmond.

Nutritional deficiency disease is due to inadequate supply,
absorption, or utilization of vitamins, mineral salts or nutri-
tional factors normally found in the body from food materials.

Discussion opened by T. Neill Barnett, M.D.,
Richmond.

The Compensatory Mechanisms of the Body in
Anemia.

FRANK L. APPERLY, M.D., Richmond.

The attempts by the various tissues of the body to com-
pensate for the oxygen shortage of anemia will be discussed
and some clinical and experimental studies demonstrated.

Current Trends in the Treatment of Chronic Arth-
ritis (*Lantern Slides*).

WILLIAM H. HIGGINS, M.D., Richmond.

A lantern slide demonstration of the more common forms
of chronic arthritis. Out of the maze of the various types of
therapy in use today a basis of therapeutic procedure is out-
lined. Emphasis is placed on a few simple measures of proved
worth.

Discussion opened by Julian M. Robinson, M.D.,
Danville.

The Present Status of the Medical Treatment of
Peptic Ulcer.

T. DEWEY DAVIS, M.D., Richmond.

Peptic ulcer remains as much a problem today as in the past.
New Methods of treatment are frequently advocated but few
of them prove to be of value. The principles underlying the
treatment of Sippy are still the backbone of ulcer therapy.

Discussion opened by Ernest G. Scott, M. D.,
Lynchburg.

Results from Serum and Sulphanilamide Treatment
of Lobar Pneumonia.

STAIGE D. BLACKFORD, M.D., University.

J. RUSSELL COOK, M.D., University.

Specific serum gave excellent results in twenty two Type I
cases. Sulphanilamide was apparently of definite value in the
majority of twenty-nine cases of various types.

Discussion opened by George B. Lawson, M.D.,
Roanoke.

Spontaneous Sub-Arachnoid Hemorrhage with
Aphasia.

P. G. HAMLIN, M.D., Cambridge, Md.

A case of spontaneous sub-arachnoid hemorrhage with hemi-
plegia and aphasia is reported in a young adult male with a
brief review of the related literature.

Discussion opened by O. B. Darden, M.D., Rich-
mond.

The Practical Value of Gastrosocopy to the Internist.
(*Lantern Slides*).

EDWARD B. MEWBORNE, M.D., Newport News.

E. L. ALEXANDER, M.D., Newport News.

Case reports, slides, and colored plates.

Discussion opened by Porter P. Vinson, M.D.,
Richmond.

Wednesday, October 5

9:00 A. M.

Surgical Section—Elks Club

The Wheeldon Sleeve Wire Method of Fixation of
Fractures.

THOMAS F. WHEELDON, M.D., Richmond.

This paper is a description of a method of fixation of fractures which tend to separate by other methods and was originated by the writer and has apparently been successful in a series of cases.

Discussion opened by R. V. Funsten, M.D., University.

The Treatment of Non-Malignant (Lymphogranuloma Venereum) Strictures of the Rectum. (*Lantern Slides*).

HARRY J. WARTHEN, M.D., Richmond.

Much has been learned about benign rectal strictures during the past decade, but the treatment has been unsatisfactory. A new operative method that has given good results is reported.

Discussion opened by Henry Lee, M.D., Roanoke.

Verumontanitis.

LAWRENCE T. PRICE, M.D., Richmond.

The results of verumontanitis pertaining to neurosis and psychoneurosis, both in the married and the unmarried, special reference to the sex relationship.

Discussion opened by Beverley R. Tucker, M.D.,
Richmond, and W. W. S. Butler, M.D.,
Roanoke.

Otogenic Acute Suppurative Arthritis.

FRANCES HENRY MCGOVERN, M.D., Danville.

Acute suppurative arthritis is evidently a rare complication of acute mastoiditis. One case is reported and general discussion of the problem is given.

Discussion opened by C. L. Bailey, M.D., Danville.

The Healing Process—General Principles.

M. H. TODD, M.D., Norfolk.

Sound healing requires good blood supply, maintenance of direct contact of tissues, avoidance or control of infection, and good general condition of the patient. Modern surgery and modern medicine can do much to control these factors.

Discussion opened by Charles W. Doughtie, M.D.,
Norfolk.

The Treatment of Hemangiomas and Lymphangiomas
in Children. (*Lantern Slides*).

FRED M. HODGES, M.D., Richmond.

L. O. SNEAD, M.D., Richmond.

R. A. BERGER, M.D., Richmond.

This paper will stress the extreme importance of early treatment of hemangiomas and lymphangiomas with a discussion of the radiant effects obtained by irradiation.

Discussion opened by Vincent W. Archer, M.D.,
University.

Experience with Prostatic Resection.

E. W. KIRBY, M.D., University.

JOHN H. NEFF, M.D., University.

Evaluation of prostatic resection after some 400 operations. Selection of patients, technical difficulties, complications, results are discussed. Resection is now advised for most prostatics.

Discussion opened by Austin I. Dodson, M.D.,
Richmond.

GENERAL SESSION

Wednesday, 2:00 P. M.

Danville Hotel

Address—The Effects of Protracted and Recurrent
Congestive Heart Failure on the Liver—FRED-
ERICK A. WILLIUS, M.D., (*Invited Guest*),
Rochester, Minnesota.

The Problem in Caring for the Mentally Sick in
Virginia.

R. FINLEY GAYLE, M.D., Richmond.

Plans for improving and extending the service of the State Hospitals in Virginia; the appointment of a full-time director; and the accomplishments by the centralization of the several governing bodies, will be reviewed and summarized.

Discussion opened by Hugh C. Henry, M.D.,
Richmond, and David C. Wilson, M.D., University.

The Value of Periodical Health Examination.

REUBEN F. SIMMS, M.D., Richmond.

An evaluation of the physical fitness of a group of 500 consecutive physical examinations of individuals having no particular complaint.

Discussion opened by Fred J. Wampler, M.D.,
Richmond.

ROUND TABLE DISCUSSIONS

Wednesday, 3:30—5:00 P. M.

Danville Hotel

Acute Respiratory Diseases—*Leaders*: WALTER B.
MARTIN, M.D., Norfolk, and DAVID P. SCOTT,
M.D., Lynchburg.

Allergic Diseases—*Leaders*: OSCAR SWINEFORD,
M. D., University, and WARREN T. VAUGHAN,
M.D., Richmond.

Etiology and Treatment of Indigestion—*Leaders:*

A. B. HODGES, M.D., Norfolk, and F. H. SMITH, M.D., Abingdon.

The Vitamins—*Leaders:* GEORGE B. LAWSON,

M.D., Roanoke, and WM. B. MCILWAINE, M.D., Petersburg.

Acute Traumatic Surgery and Fractures—*Leaders:*

M. B. HIDEN, M.D., Warrenton, and C. E. KEEFER, M.D., Lynchburg.

Virginia Radiological Society—*Leader:* B. R.

KIRKLIN, M.D., Rochester, Minn., Head of the Diagnostic Radiological Section of the Mayo Clinic.

Virginia Pediatric Society—*Subject:* Allergic Dis-

orders of Childhood. *Leaders:* L. T. ROYSTER, M.D., University, EMILY GARDNER, M.D., Richmond, and W. AMBROSE MCGEE, M.D., Richmond.

Virginia Neuropsychiatric Society—To be an-

nounced.

Virginia Obstetrical and Gynecological Society—

Subject: Pre-natal Care. *Leader:* C. J. ANDREWS, M.D., Norfolk.

TOPICS

The Initial Pre-natal Examination and Instructions—E. S. GROSECLOSE, M.D.

Treatment of Nausea and Vomiting of Pregnancy—W. R. PAYNE, M.D.

Prevention and Treatment of Abortion—B. H. GRAY, M.D.

Prevention and Treatment of Toxemia of Pregnancy—M. P. RUCKER, M.D.

Syphilis in Pregnancy—TIFFANY J. WILLIAMS, M.D.

Hemorrhage of Late Pregnancy—H. HUDNALL WARE, JR., M.D.

Virginia Urological Society—*Subject:* Urological

Conditions in Childhood. *Leader:* C. E. CONRAD, M.D., Harrisonburg.

Virginia Orthopedic Society—*Subject:* Neurosurgi-

cal Causes of Low Back Pain and Sciatica—C. C. COLEMAN, M.D., Richmond.

Discussion opened by William T. Graham, M.D., Richmond.

Wednesday, 6:30 P. M.

Subscription Dinner and Floor Show
Danville Armory

GENERAL SESSION

Thursday, October 6

9:00 A. M.

Ballroom, Danville Hotel

Clinical Manifestations of Acute Rheumatic Fevers:

Age-Incidence, Diagnosis and Treatment.

J. FRANKLIN WADDILL, M.D., Norfolk.

The clinical manifestations of acute rheumatic fever in its several forms and different age levels with discussion of their individual recognition, treatment and laboratory procedures. The recognition of recurrence, together with the care of the convalescent rheumatic child. Changes in the sedimentation rate, leucocytes and electrocardiogram.

Discussion opened by A. B. Hodges, M. D., Norfolk.

Diagnostic Methods Which Have Served Me Best in Determining Sinus Disease and So-Called Hay Fever.

E. TRIBLE GATEWOOD, M.D., Richmond.

The general practitioner is often interested in making sinus diagnoses. For this reason, certain diagnostic aids are discussed and their relative evaluation emphasized.

Discussion opened by Thomas E. Hughes, M.D., Richmond.

Some Practical Considerations of the Sinuses. (*Lantern Slides*).

KARL S. BLACKWELL, M.D., Richmond.

The world has become sinus conscious. We must be able to tell if our patient has a definite sinus involvement. Certain forms of treatment are outlined.

Discussion opened by W. Wallace Gill, M.D., Richmond.

Shock Therapy in the Treatment of Affective Disorders

DAVID C. WILSON, M.D., University.

Shock therapy, either with insulin or metrazol, has been used in treatment of schizophrenia for five years. However, the affective disorders such as manic-depressive psychosis and involuntional melancholia have not been so treated until recently. Last year, at University Hospital, shock therapy was used in a series of cases suffering from manic or depressive phases of manic-depressive psychosis and involuntional melancholia. Present paper gives results of treatment and technique used.

Discussion opened by G. B. Barrow, M.D., Staunton, and R. Finley Gayle, M.D., Richmond.

The Clinical Course, Treatment, and Prognosis of Acute Glomerulonephritis.

JULIAN R. BECKWITH, M.D., University

J. EDWIN WOOD, JR., M.D., University.

BYRD LEAVELL, M.D., University.

Roentgen Ray Examination of Colon. (*Lantern Slides*).

WM. P. GILMER, M.D., Clifton Forge.

Methods used; choice of methods; divisions; the normal colon; pathological conditions—colitis, polyposis, diverticulitis, tuberculosis, intussusception, and carcinoma; conformation of findings; report of cases.

Discussion opened by C. H. Peterson, M.D., Roanoke.

Special Order—Report from House of Delegates.
Induction of President.
Adjournment.

Time limit for papers—fifteen minutes;
Discussions—five minutes.

Papers are the property of the Society and should be handed the reporter immediately after presentation.

All sessions will begin promptly.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. JAMES B. STONE, 15 Maxwell Road, Richmond.

President-Elect—MRS. HAWES CAMPBELL, Venter.

Corresponding Secretary—MRS. LAWRENCE O. SNEAD, 5307 New Kent Road, Richmond.

Recording Secretary—MRS. JAMES K. HALL, 3011 Seminary Avenue, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, 2502 Hawthorne Avenue, Richmond.

Chairman of Publicity—MRS. FRED J. WAMPLER, 4103 Forest Hill Avenue, Richmond.

PROGRAM

Sixteenth Annual Meeting

Hotel Danville

Danville, Va. October 4, 5, 6, 1938

Every woman attending the Convention is cordially invited to attend these meetings.

Tuesday, October 4th

Registration 5:00 to 8:00 P. M. at the Hotel Danville.

Every woman is requested to register immediately upon arrival. (Registration fee 25 cents).

8:00 P. M.—Opening meeting of the Medical Society of Virginia.

Wednesday, October 5th

8:30 A. M.—Registration Booth open. Hotel Danville.

9:00 to 10:00 A. M. — Pre-Convention Board Meeting. Small Dining Room—Hotel Burton (one block down street.)

All County Presidents, Presidents-Elect (or Vice-President where there is no President-Elect)

and State Officers and Chairmen are expected to attend this meeting.

10:10 A. M. to 1:00 P. M.—Hotel Burton—General Annual Meeting—Open to all women attending the Convention.

President—Mrs. James B. Stone, Richmond.

Invocation—Dr. James Shelburne, Danville.

Address of Welcome—Mrs. Roy W. Upchurch, Danville.

Response—Mrs. E. Latane Flanagan, Richmond.

Report of Committee on Arrangements and Registration—Mrs. James C. Giles, Danville.

In Memoriam.

Minutes Fifteenth Annual Convention.

Roll Call of County Auxiliaries—Recording Secretary—Mrs. J. K. Hall, Richmond.

President's Message—Mrs. James B. Stone, Richmond.

President's Announcements.

Reports:

Corresponding Secretary—Mrs. Lawrence O. Snead, Richmond.

Treasurer—Mrs. Reuben F. Simms, Richmond.

Organization—Mrs. Hawes Campbell, Venter.

Program and Health Education—Mrs. T. Elmore Jones, Portsmouth.

Finance—Mrs. W. B. McIlwaine, Petersburg.

Public Relations—Mrs. Raymond C. Kimbrough, Norfolk.

Hygeia—Mrs. Edward Holland Trower, Eastville.

Revisions—Mrs. William Lett Harris, Norfolk.

Press and Publicity—Mrs. Fred J. Wampler, Richmond.

Exhibits—Mrs. H. A. Latane, Alexandria.

Jane Todd Crawford Memorial—Mrs. Llewellyn Powell, Alexandria.

Tuberculosis Sanatorium Bed—Mrs. Fletcher J. Wright, Petersburg.

Cancer Control—Mrs. Joseph Bear, Richmond.

Legislation—Mrs. W. Ambrose McGee, Richmond.

Historian and Archives—Mrs. Southgate Leigh, Norfolk.

Parliamentarian—Mrs. M. N. King, Norfolk.

County Presidents:

Mrs. Oliver A. Ryder, Alexandria. Auxiliary to Alexandria Medical Society.

Mrs. John R. Hamilton, Nassawadox. Auxiliary to the Accomac-Northampton Medical Societies.

Mrs. W. E. Dickerson, Danville. Auxiliary to the Danville-Pittsylvania County Medical Society.

Mrs. Clyde Adkerson, Lynchburg. Auxiliary to the Lynchburg Academy of Medicine.

Mrs. A. W. Lewis, Aylett. Auxiliary to the Mid-Tidewater Medical Society.

- Mrs. C. J. Devine, Norfolk. Auxiliary to the Norfolk County Medical Society.
- Mrs. Thomas Hunnicutt, Jr., Newport News. Auxiliary to the Warwick County Medical Society.
- Mrs. Fletcher J. Wright, Petersburg. Auxiliary to the Petersburg Unit of Fourth District Medical Society.
- Mrs. Ira L. Hancock, Creeds. Auxiliary to the Princess Anne County Medical Society.
- Mrs. E. Latane Flanagan, Richmond. Auxiliary to the Richmond Academy of Medicine.
- Mrs. T. Brantley Henderson, Williamsburg. Auxiliary to Williamsburg-James City County Medical Society.

Delegates:

- Woman's Auxiliary to the American Medical Association, San Francisco Meeting—Mrs. James B. Stone, Richmond.
- Woman's Auxiliary to the Southern Medical Association, New Orleans Meeting—Mrs. Meade Edmunds, Petersburg.

Unfinished Business.

New Business.

Recommendations from the Board.

Presentation of Membership Trophy.

Reports:

- Committee on Resolutions.
- Committee on Credentials.
- Nominating Committee—Mrs. Franklin D. Wilson, Norfolk.

Election of Officers.

1:30 P. M. Auxiliary Luncheon (Subscription).
Danville Country Club.

Greetings:

- Dr. G. F. Simpson, Purcellville, President Medical Society of Virginia.
- Dr. P. W. Miles, Danville, President Danville-Pittsylvania County Medical Society.
- Dr. Alex F. Robertson, Staunton, President-Elect of the Medical Society of Virginia.
- Dr. P. St. L. Moncure, Norfolk, Chairman of Advisory Council.

Installation of Officers conducted by Mrs. M. N. King of Norfolk.

Presentation of Gavel.

Inaugural Message of President—Mrs. Hawes Campbell, Venter.

Adjournment.

Post-Convention Board Meeting at Hotel Burton. Mrs. Hawes Campbell, Presiding.
(Time to be announced).

7:00 P.M.—Floor Show and Dinner at the Armory.

Thursday, October 6th

10:00 A. M.—Golf Tournament at Danville Golf Club. Sight-seeing trip for those not playing golf.

1:30 P. M.—Luncheon at Danville Golf Club. Bridge following luncheon.

The Danville Meeting.

D o not delay
A nother day
N ow is the time to plan
V irginia's Annual Meeting
I s getting close at hand.
L et's all arrangements fix
L ine up our ducks and chicks—and
E njoy October 4th to 6th!

October is fast approaching bringing with it the spice of Autumn, the Sixteenth Annual Meeting of the Auxiliary, and the Sixty-Ninth Annual Session of the Medical Society of Virginia.

Annual meeting time provides one of those rare occasions on which your husband feels justified in slipping away for a few days and leaving behind the aches and ills of his patients. Plan to accompany him to Danville this year, and join in this Annual Reunion which brings so much joy and refreshment to all. Here old friends will renew acquaintance and new friendships will be made.

Annual meeting time also provides the one occasion during the year when all Auxiliary members and friends can assemble and have the privilege of listening to reports of the distinctive and worth-while work which our organization is doing, and how this work is being reflected in more healthful conditions for the State we love so well.

The newly-organized Danville group has thoughtfully and carefully planned everything for your comfort and pleasure. The State Auxiliary awaits you with a warm and cordial welcome. Your trip to Danville will, I am sure, prove to be a delightful experience, and one which you will treasure in your store-house of pleasant memories. Remember the dates—October 4 to 6, and by YOUR presence make this the best annual meeting ever held!

JANET WATKINS STONE,
President.

News from Auxiliaries.

NORFOLK

The Auxiliary to the Norfolk County Medical Society realized \$377.39 from two card parties and a dinner dance on April 19 at the Norfolk Yacht

and Country Club. \$310.00 of the proceeds was given to maintain a patient at the Tidewater Memorial Hospital.

The Auxiliary planted a live-oak tree on the grounds of the Norfolk Museum of Arts and Sciences in observance of "Doctor's Day". Mrs. C. J. Devine, president of the Auxiliary, spoke on the history and significance of "Doctor's Day", and of the self-sacrificing work done by doctors in every community. The presentation was made by Mrs. R. H. Peake, program chairman, and the dedicatory address was given by Mrs. M. N. King, historian of the Auxiliary. Father Leo J. Ryan, pastor of Blessed Sacrament Church pronounced the benediction. Following the ceremonies the Auxiliary and Medical Society members were entertained at the Museum.

A regular meeting was held on May 27 in the library of the Medical Arts Building with Mrs. C. J. Devine, president presiding.

A report was given at this meeting of the booths which the Auxiliary members had charge of during the Cancer Control Drive.

A history of Jane Todd Crawford was given by Mrs. T. Elmore Jones, and it was decided by the Auxiliary to send ten cents for each active member from the Treasury to the Jane Todd Crawford Memorial.

Following the meeting a public relation tea was held, at which time all organizations interested in health projects were invited. Dr. J. Franklin Waddill spoke on "The Mortality Rate and Contributory Causes of Death in Various Types of Heart Diseases".

Mrs. Millard B. Savage will be president of the Auxiliary for the coming year, and Mrs. H. W. Rogers will succeed Mrs. Savage as president-elect.

(MRS. W. E.) RUBY D. BUTLER,
Chairman, Press and Publicity.

ACCOMAC-NORTHAMPTON

The Accomac-Norhampton Auxiliary met on July 5 at the Accomac Country Club, Accomac. In place of the usual meeting, we had a picnic at which the members of the medical societies of both counties and nurses from the Accomac-Northampton Hospital were our guests. It was a very pleasant occasion and gave us an opportunity to become better acquainted.

(MRS. J. MORTIMER) SUSIE N. LYNCH.

WILLIAMSBURG-JAMES CITY

The Williamsburg-James City Auxiliary met July 27, at the home of Mrs. W. L. L. Smoot, with six members present. Mrs. T. B. Henderson, the president, presided. A short business session was followed by an interesting health program, stress being laid on the importance of a yearly physical examination for each of the members. A social hour followed.

(MRS. L. V.) MABEL R. HENDERSON,
Reporter.

Public Health Statistics

I. C. RIGGIN, M. D.,

State Health Commissioner of Virginia.

The report of the State Health Department's bureau of communicable diseases, as compiled for the month of July, shows the following cases compared with the same month in 1937.

| | 1938 | 1937 |
|--------------------------------|------|------|
| Typhoid and Paratyphoid----- | 109 | 145 |
| Diphtheria ----- | 54 | 40 |
| Scarlet Fever ----- | 44 | 31 |
| Measles ----- | 436 | 278 |
| Meningitis ----- | 8 | 19 |
| Poliomyelitis ----- | 12 | 12 |
| Rocky Mountain Spotted Fever-- | 34 | 17 |
| Typhus Fever ----- | 0 | 1 |

SURGICAL TREATMENT OF TUBERCULOSIS

A plan for the surgical treatment of tuberculosis, made possible through an appropriation by the General Assembly at the last session, is being inaugurated by the State Department of Health.

Arrangements have been made with Memorial and St. Philip's Hospitals in Richmond, the University Hospital in Charlottesville and a number of especially equipped and staffed private hospitals, to perform such major surgical operations as may be indicated in the necessary and adequate treatment of tuberculosis.

To provide the essential preliminary sanatorium treatment prior to admission to the hospital for operation, plans are being developed at the three State sanatoria to care for surgical cases promptly upon receipt of the application for surgical treatment. The patient's choice of hospital for operation will be approved in so far as facilities and circumstances will permit.

Facilities also are being developed throughout the State by the Department to supplement and make more readily available pneumothorax treatments for those suffering with tuberculosis and who are unable to pay for such treatments or to travel great distances. As is well-known, those receiving this type of therapy require periodic attention. To this end the Department is making arrangements with local hospitals.

Tuberculosis in Virginia, as in other jurisdictions, remains a serious public health problem. This new service will aid as a further protective influence against its spread.

FREE ANTISYPHILITIC DRUGS

The 1938 General Assembly appropriated \$11,915 for each year of the biennium for the control of venereal diseases. This money, with an allotment of \$58,983 made to Virginia by the U. S. Public Health Service, has enabled the State Department of Health to inaugurate an active venereal disease program. One of the first steps will be the free distribution of drugs employed in the treatment of syphilis to all cases under the observation of physicians, clinics and hospitals. Distribution will start on or about September first.

The accepted figure of prevalence for syphilis is 10 per cent of the adult population. Treatment for syphilis must be administered weekly over a period of from one to two years and involves an expenditure that the majority of sufferers are unable to pay. This fact has led the Department to attack the problem at this point.

Truth About Medicine

In addition to the articles previously enumerated, the following has been accepted by the Council on Pharmacy and Chemistry of the American Medical Association:
E. R. Squibb & Sons.

Refined Tetanus Toxoid, Alum Precipitated—Squibb, two 1 cc. vials package.

New and Nonofficial Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Benzedrine Sulfate.—Amphetamine sulfate.—Racemic desoxy-norephedrine sulfate.—Racemic benzyl-methyl carbinamine sulfate. Benzedrine sulfate is useful in the treatment of narcolepsy, for controlling symptoms similar to

those of narcolepsy in the treatment of postencephalitic parkinsonism, in the treatment of certain depressive psychopathic conditions and for facilitating roentgenographic studies of the gastrointestinal tract. Its use is not recommended in the treatment of sleepiness and fatigue in normal individuals because of the possible danger of pressor effects from continued use, because of the dangers of eliminating the warning signal of sleepiness in individuals who are overdoing, because of the possibility of habit formation and because cases of collapse have ensued. Its use is not recommended for developing a sense of increased energy or capacity for work. Its use in depressive psychopathic cases should be confined to patients in institutions. The very nature of the therapeutic effects, as well as the side actions of this drug, requires that its use be promoted with proper caution. It is supplied in the form of tablets, each containing benzedrine sulfate, 10 mg. (0.01 Gm.). Smith, Kline & French Laboratories, Philadelphia, Pa.

Nicotinic Acid.—3:Pyridine Carboxylic Acid.—Nicotinic acid is accepted for purposes of standardization and clinical experimentation on its use in pellagra.

Nicotinic Acid (3:Pyridine Carboxylic Acid).—SMA Co.—A brand of nicotinic acid—N.N.R. It is supplied in the form of 5 cc. vials, each vial containing 30 mg. of nicotinic acid in sterile physiologic solution of sodium chloride; in 10 cc. vials, each vial containing 10 mg. of nicotinic acid in physiologic solution of sodium chloride; and in the form of tablets 20 mg. and 100 mg. S.M.A. Corporation, Cleveland, Ohio. (*J. A. M. A.*, July 2, 1938, p. 27.)

Ampoules Solution Metycaine 10 per cent, 2 cc.—Each 2 cc. contains metycaine (New and Nonofficial Remedies, 1938, p. 67) 0.2 Gm. (3 grains) in distilled water. To be used in spinal anesthesia. Eli Lilly & Co., Indianapolis, Ind.

Ampoules Solution Metycaine 20 per cent, 5 cc.—Each 5 cc. contains metycaine (New and Nonofficial Remedies, 1938, p. 67) 1 Gm. (15½ grains) in distilled water. To be used for infiltration and regional anesthesia. The solution must be diluted before using. Eli Lilly & Co., Indianapolis, Ind.

Nicotinic Acid Amide.—3:Pyridine Carboxylic Acid Amide.—The amide of nicotinic acid.—The actions, uses and dosage of nicotinic acid amide are undetermined. The product is accepted for standardization and clinical experimentation only.

Nicotinic Acid Amide (3:Pyridine Carboxylic Acid Amide) SMACO.—A brand of nicotinic acid amide—N.N.R. S.M.A. Corporation, Cleveland, Ohio. (*J. A. M. A.*, July 16, 1938, p. 253.)

Accepted Devices for Physical Therapy

The following devices have been accepted by the Council on Physical Therapy of the American Medical Association for inclusion in its list of accepted devices for physical therapy:

Model C Thermospectral Lamp.—This lamp is recommended for use wherever heat is indicated as a therapeutic agent for local application. This lamp is similar to the

Model B Lamp previously accepted by the Council as a source of thermogenic radiation. The Model C Thermospectral Lamp is equipped to operate with an infra-red nonluminous element or incandescent filament bulb which may be used interchangeably with the aid of a lamp adapter. A lamp may be procured which employs only the infra-red nonluminous element. The unit was tried out in a clinic acceptable to the Council and found to give satisfactory service. General Electric X-Ray Corporation, Chicago. (*J. A. M. A.*, July 30, 1938, p. 423.)

Propaganda for Reform

Risk in Using Zinc Sulfate for Prevention of Poliomyelitis.—About one year has passed since Schultz and Gebhardt reported that 1 per cent zinc sulfate solution applied to the olfactory mucosa in monkeys affords a high degree of protection against poliomyelitis virus instilled into the nose a month later. Schultz and Gebhardt now point out that several cases have occurred in which the sense of smell has not yet returned after a period of more than six months. They also observed after the application of zinc sulfate to the olfactory area of monkeys a severe exudative inflammation of the olfactory mucosa, together with desquamation of epithelial cells. Caution is advised, therefore, in the further use of zinc sulfate in man until more is known about the risk of permanent anosmia and of the mechanism underlying the protection against poliomyelitis in monkeys. Physicians will be able to help investigators by transmitting to them their individual experiences. (*J. A. M. A.*, June 11, 1938, p. 2013.)

Book Announcements

Injection Treatment of Varicose Veins and Hemorrhoids. By H. O. McPHEETERS, M.D., F.A.C.S., Formerly Director of the Varicose Vein and Ulcer Clinic, Minneapolis General Hospital; Attending Physician, New Asbury, Fairview and Northwestern Hospitals, Minneapolis. And JAMES KERR ANDERSON, M.D., F.A.C.S., Instructor in Surgery, University of Minnesota School of Medicine; Fellow, American Proctologic Society; Adjunct Surgeon, Minneapolis General Hospitals; etc. Octavo of 315 pages. Philadelphia. F. A. Davis Company. 1938. Illustrated with 82 half-tones and line engravings. Cloth. Price \$4.50.

This is a book that should be in the library of every physician who attempts any type of injection treatments for although it deals specifically only with varicose veins and hemorrhoids, it gives a sound foundation for all types of sclerosing therapy. The chapter on "Solutions used—Past and present" is of particular value to any one actively engaged in this work, for here is given a very concise and accurate description of the solution, that can be success-

fully used with the advantages, disadvantages, dosage and contra-indications for each.

The second part of this volume by Anderson dealing with hemorrhoids is just as valuable as the first part, so in this one book not only the anatomy, embryology, physiology, and mechanics, but also a description of the diagnosis, possible complications and treatment of these conditions is set forth. All of the accepted methods of treatment are described, although not enough space nor importance is given to the use of elastic adhesive in the treatment of edema and ulcers of the legs.

The short choppy chapters detract from the make-up and continuity of the book, if not from its value. However, all in all, this is an excellent treatise on a type of therapy that is justly becoming more and more recognized and appreciated.

GUY HORSLEY.

Management of the Sick Infant and Child. By LANGLEY PORTER, B.S., M.D., M.R.C.S. (Eng.), L.R.C.P. (Lond.), Dean, University of California Medical School and Professor of Medicine; Formerly Professor of Clinical Pediatrics, University of California Medical School; Visiting Pediatrician, San Francisco Children's Hospital; etc. And WILLIAM E. CARTER, M.D., Director, University of California Hospital Out Patient Department; Formerly, Chief of Children's Clinic, University of California Hospital; etc. Fifth Revised Edition. St. Louis. The C. V. Mosby Company. 1938. Octavo of 874 pages. Cloth. Price \$10.00.

The fifth edition is a great deal more than a reprint of former editions. The work has been extensively revised and an enormous amount of detailed information has been compressed into the 874 pages. Part 1 is devoted entirely to symptoms and deals with the significance of various symptoms encountered in pediatric work in a very comprehensive fashion. Part 2 is concerned chiefly with the discussion of systemic diseases and brings the subject matter up to date in a very interesting and attractive sort of style. Part 3 is devoted to methods, practical therapeutic procedures are discussed in detail. There are perhaps a few important omissions that would be difficult to avoid in a book of this size, but on the whole it is an excellent piece of work and is shot through with meaty material amply supported with facts and data. The book would be a valuable addition to the armamentarium of any physician doing pediatric work.

THOMAS D. JONES.

Virginia Medical Monthly

Founded by LONDON B. EDWARDS, M. D., April, 1874
Owned by MEDICAL SOCIETY OF VIRGINIA since November, 1919
WYNDHAM B. BLANTON, M. D., *Editor*
AGNES V. EDWARDS, Richmond, *Business Manager*

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All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Monthly, 1200 East Clay Street, Richmond, Va.

This journal is not responsible for the opinions and statements of its contributors.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Subscription Price: \$2.00 per annum in advance. Single Copies 25c.

VOLUME 65

SEPTEMBER, 1938

No. 9

Editorial

Bliss was it in that dawn to be alive
But to be young was very heaven.

It was a great day for medicine in Virginia and in Richmond, as well as for the Medical College of Virginia, when work was begun on the two million dollar skyscraping hospital on the southwest corner of Academy Square. The hospital promises to be a worthy companion to the new Clinic Building already towering on the northwest corner. In size as well as in facilities, both for teaching and for caring for the sick, this pretentious structure will eclipse anything of its kind in the State and will compare favorably with the hospitals of institutions elsewhere. Its completion will round out in record time a building program whose proportions exceed the dreams of its most ardent promoters. From a purely physical point of view the new hospital will place the Medical College of Virginia in a most favorable position to continue its determined fight to keep Richmond a center of medicine in the South.

It is well recognized that it requires more than bricks and mortar, more than concrete and steel, to create and maintain such an enterprise as is here contemplated. A clear vision of the future of medicine as a science and as a service in this community is going to be needed, and the vision must be based upon an intimate acquaintance with the great traditions of the profession. Sound judgment, a high order of intelligence and an appreciation of spiritual

as well as economic forces are going to be required. The challenge of such material wealth, such rich facilities for research, for teaching, for the care of the sick, is tremendous. It is offered not only to the profession of the State and of the city, but to the people of the Commonwealth as well. It is a call to all.

The challenge to the people of Virginia is to support enthusiastically this important institution which they will have every reason to admire and whose services they will have every right to use. The people of Virginia are going to be called upon to assist in the capital outlay, to endow rooms, wards, wings, laboratories, fellowships. Many of them will want to contribute, some of them have already contributed generously. They will take pride in what they may call their own, patronize it, believe in it, perhaps brag about it.

It is a challenge to the alumni of the Medical College of Virginia. Nearly two thousand of them practice medicine in Virginia. They constitute the great majority of doctors in the State. For them there must be a tremendous satisfaction in witnessing their Alma Mater come into her own. The active support of this great army of well-wishers is going to mean much in the effort to make this great investment pay dividends in real service and scientific achievement.

It is a challenge also to the medical profession of

Richmond where for years private institutions have housed and cared for the majority of those needing hospital treatment. The necessary and unique contribution of these hospitals, past and present, cannot be overlooked. Fortunately the private pavilion of the Medical College of Virginia will not be erected in competition to them. It has been stated on good authority that the total number of private beds at present planned for the new hospital will very little exceed those already in the Memorial and Dooley Hospitals. There have been times in the recent past when a distinct shortage in available private beds has been felt in Richmond. As an outcome of the hospital expansion of the Medical College of Virginia advantages are certain to accrue to Richmond as a whole. The more Richmond as a medical center is appreciated by people in this and adjoining states the greater will be the number of patients seeking hospitalization here. To all the doctors of Richmond there are compelling reasons to cooperate with the Medical College of Virginia not only in putting over the present venture but in supporting it when it is in operation.

Perhaps the greatest challenge is to those who control the destinies of the Medical College of Virginia, the Heads of Departments, the Full-Timers, and the Administration. Brains as well as bricks must be the material out of which the new institution is built and there should be no room on the program for a One-Man Show. Obviously physical expansion implies enlarged personnel. More is going to be asked of the doctors of the community who now serve the college and the hospital without remuneration. It is to be taken for granted that these doctors stand ready to enter this wider field of usefulness. Means will have to be found, however, to weld them more intimately into the fabric of the new organization. It is to be hoped that a new and compelling incentive to this sort of service will be found, that recognition will be given to those to whom it should be given, that opportunities for research and clinical experience will be increased for them, that some independence of action will be granted them, so that they, as well as those on the pay roll, may call the institution their own and have some voice in its direction as well as some pride in its accomplishments.

Upon a generous and cooperative spirit between these two groups hangs the future of the Medical

College of Virginia, its growth in public esteem, its output in investigative work, its service to the community and its place among the medical schools of the country. The stage is set for great events. Success depends on the actors and on how well each plays his part.

The New Food, Drug and Cosmetic Act.

On the twenty-ninth of June of this year Secretary Wallace summarized in a radio address the principal features of the new Food, Drug and Cosmetic Act which had recently been signed by the President of the United States. Secretary Wallace pointed out:

"The new law brings *all cosmetics* except toilet soaps under control, and outlaws those which may be injurious to health.

"It brings under control drugs used in the diagnosis of disease, and drugs intended to affect the structure or any function of the body. Reducing drugs, so-called 'slenderizers', are included in this provision.

"The new law prohibits traffic in *new* drugs, unless such drugs have been adequately tested to show they are safe for use, and requires that certain habit-forming drugs bear warning labels.

"It includes therapeutic devices and will afford protection against the sale of such fake contraptions as so-called 'electric' belts.

"It provides for definitions and standards of identity and quality for food under which the integrity of our food supplies can be maintained.

"It sets up more effective safeguards against poisonous foods.

"It provides increased criminal penalties for violations. . . .

"The new Act requires much information of value to consumers to appear on the packages in which we buy foods, drugs, and cosmetics. It is still up to the consumer to find out what this significant information means to him and his family, and to apply that knowledge in his buying."

In Virginia a new drug and cosmetic law became effective on June 21, 1938. The bill was sponsored in the House of Delegates by E. W. Sanford, a druggist member, with the backing of the Virginia Pharmaceutical Association. It is a fine companion to the Federal Act.

Proceedings of Societies

Virginia State Board of Medical Examiners.

All of the one hundred and fifteen applicants who came up for examination at the meeting of the Board in June passed and were licensed to practice in Virginia. In addition to these, there were thirty-four licensed by reciprocity. Names of both sets follow:

APPLICANTS LICENSED BY EXAMINATION

Dr. Elton Meredith Alrich, University.
 Dr. Leon J. Anson, Johnstown, Pa.
 Dr. Claudio Rodriguez Arce, Richmond.
 Dr. Bathurst Browne Bagby, Jr., Charlottesville.
 Dr. Ernest Lynwood Bagby, Richmond.
 Dr. Evelyn Mary Ball, Cleveland, Ohio.
 Dr. Elizabeth V. Barnes, Ivy Depot.
 Dr. Edward Gordon Bell, Jr., New York City.
 Dr. Richard P. Bell, Jr., Staunton.
 Dr. Robert F. Bell, Richmond.
 Dr. Belton Allen Bennett, Jr., Charlottesville.
 Dr. Julius Lyons Berkley, Charleston, W. Va.
 Dr. James Bell Black, Jr., Rochester, N. Y.
 Dr. Raymond S. Blackman, Vienna.
 Dr. Edwin C. Bryce, II, Richmond.
 Dr. John Daniel Call, Richmond.
 Dr. Paul Kiser Candler, Emory.
 Dr. Russell Neff Carrier, New York City.
 Dr. Julius F. Chairsell, Jr., Birmingham, Ala.
 Dr. John W. Clark, Washington.
 Dr. Phillips L. Claud, Portsmouth.
 Dr. William H. Copley, Richmond.
 Dr. Joseph Coudon, VI, Wheeling, W. Va.
 Dr. Hubert D. Crow, Richmond.
 Dr. Charles Nuckols Davidson, Nuckols.
 Dr. Samuel S. DuPuy, Charleston, W. Va.
 Dr. Garland Dyches, Richmond.
 Dr. Alfred J. Ferlazzo, Norfolk.
 Dr. Robert M. Ferrell, Lewisburg, W. Va.
 Dr. Herbert W. Fink, Norfolk.
 Dr. John H. Fitzgerald, Jr., Crewe.
 Dr. George S. Fultz, Jr., Richmond.
 Dr. John F. Gale, Birmingham, Ala.
 Dr. James Thomas Gill, Richmond.
 Dr. Joseph P. Griffin, Portsmouth.
 Dr. DuPont Guerry, III, University.
 Dr. Edward E. Haddock, Madison, Wis.
 Dr. Gordon D. Hall, Richmond.
 Dr. Ina Claire Hall, Richmond.
 Dr. Daniel C. McK. Hallson, Petersburg.
 Dr. Charles J. Harkrader, Jr., Charlottesville.
 Dr. Joseph H. Harris, Washington, D. C.
 Dr. Ivor David Harris, Philadelphia, Pa.
 Dr. Jacob G. Hebble, III, Newport News.
 Dr. John Harrell Hill, Charlottesville.
 Dr. Archie A. Hoffman, Richmond.
 Dr. Octavius L. Huffman, Jr., Roanoke.

Dr. Thomas J. Humphries, Culpeper.
 Dr. Charles F. James, Jr., New York City.
 Dr. Reginald G. James, Washington, D. C.
 Dr. Benjamin C. Jones, Jr., Huntington, W. Va.
 Dr. Reverdy H. Jones, Jr., Philadelphia, Pa.
 Dr. Erna Katz, Richmond.
 Dr. Jefferson Davis Kernodle, Richmond.
 Dr. John Randolph Kight, New Orleans, La.
 Dr. Norman Elwood King, Norfolk.
 Dr. Albert Anthony Kossove, Richmond.
 Dr. Sydney Loeb Lang, Brooklyn, N. Y.
 Dr. Carl S. Lingamfelter, Jr., Richmond.
 Dr. Leslie Mac Lisle, Jr., Charlottesville.
 Dr. John Burton MacGregor, Afton.
 Dr. Marvin Everett McRae, Richmond.
 Dr. Florence Iris Mahoney, Hazelhurst, Wis.
 Dr. Joseph Lee Mann, Hampton.
 Dr. Jessie D. Marsh, Lynchburg.
 Dr. Charles A. Mella, Jr., Iowa City, Iowa.
 Dr. William A. Mitchell, Pittsburgh, Pa.
 Dr. Dabney Von K. Moon, New York City.
 Dr. Liskie Jay Moore, Huntington, W. Va.
 Dr. William Thomas Moore, Cincinnati, Ohio.
 Dr. Earle B. Morgan, Roanoke.
 Dr. John Franklin Morris, Huntington, W. Va.
 Dr. Charles T. Nicholson, Jr., Alexandria.
 Dr. Paul James Nutter, Richmond.
 Dr. Robert B. Orr, Orange, N. J.
 Dr. Sidney G. Page, Jr., Richmond.
 Dr. Richard C. Potter, Detroit, Mich.
 Dr. Henkel M. Price, Richmond.
 Dr. R. W. Prichard, III, Norfolk.
 Dr. Chas. L. Prince, Baltimore, Md.
 Dr. Walter John Rein, Richmond.
 Dr. Chas. N. Romaine, Jr., Petersburg.
 Dr. Geo. R. Rosenbaum, Bland.
 Dr. Herbert G. Ruffin, Wheeling, W. Va.
 Dr. Albert J. Russo, Baltimore, Md.
 Dr. Jose W. D. Santiago, San Juan, P. R.
 Dr. Irving M. Schor, Brooklyn, N. Y.
 Dr. A. C. Schnurman, Baltimore, Md.
 Dr. Earl S. Scott, Richmond.
 Dr. Edward G. Sharp, Philadelphia, Pa.
 Dr. Malcolm F. Sher, Brooklyn, N. Y.
 Dr. Darwin E. Smith, Roanoke.
 Dr. Maynard P. Smith, Farmville.
 Dr. Howard G. Snead, Chattanooga, Tenn.
 Dr. Lewis F. Sprague, Allentown, Pa.
 Dr. Otto S. Steinreich, Reidsville, N. C.
 Dr. P. P. Steptoe, Jr., Shepherdstown, W. Va.
 Dr. Geo. H. Stollwerck, Brooklyn, N. Y.
 Dr. Charlotte E. Swaney, East Radford.
 Dr. Geo. L. Tabor, Jr., Arlington.
 Dr. William Parker Terry, Burkeville.
 Dr. A. McTaggart Thompson, Washington, D. C.

Dr. John Kirk Train, Jr., New York City.
 Dr. Gilman Rackley Tyler, Madison, Wis.
 Dr. John Vaccaro, Brooklyn, N. Y.
 Dr. Edward W. Venning, University.
 Dr. William Pease Warden, Uniontown, Pa.
 Dr. Francis R. Whitehouse, Lynchburg.
 Dr. Geo. H. Williams, Richmond.
 Dr. Hazael Jos. Williams, Richmond.
 Dr. Robert H. Williams, University.
 Dr. James Garnett Willis, Remington.
 Dr. Geo. Nelms Wise, Jr., Philadelphia, Pa.
 Dr. Frederick G. Woodson, University.
 Dr. William H. Woodson, Norfolk.

APPLICANTS LICENSED AD INTERIM BY RECIPROCITY

Dr. Waldo Mason Wattles, Lynchburg.
 Dr. Joseph Rogers Blalock, Marion.
 Dr. Marion Thomas Rosser, Hillsville.
 Dr. Hugh Griffin, Dante.

APPLICANTS LICENSED BY RECIPROCITY

Dr. Raymond K. Butler, Front Royal.
 Dr. Charles G. Bryant, Raven.
 Dr. Russell F. J. Cahoon, Arlington.
 Dr. Geo. W. Cooper, Winchester.
 Dr. J. W. Devine, Jr., Lynchburg.
 Dr. Otto Anderson Engh, Alexandria.
 Dr. E. V. Famiglietti, Grundy.
 Dr. Herman W. Farber, Weldon, N. C.
 Dr. Chas. Sumner Finch, Jr., Jamaica, N. Y.
 Dr. J. E. Fissel, Jr., Newport News.
 Dr. Joseph E. Freed, Greeneville, S. C.
 Dr. G. A. Galvin, Washington, D. C.
 Dr. Thomas V. Hynes, Jr., Richmond.
 Dr. Geo. Mahlon Hutto, Alexandria.
 Dr. Beverley R. Kenyon, III, New York City.
 Dr. Prentice Kinser, Jr., University.
 Dr. Bernard Isaac Lidman, Norfolk.
 Dr. Jos. H. Lieberman, Norton.
 Dr. Percy E. Lilly, Northumberland County.
 Dr. Robert P. Null, Roanoke.
 Dr. Grover DeW. Rackley, Richlands.
 Dr. J. T. Rountree, Front Royal.
 Dr. Raymond E. Selders, Washington, D. C.
 Dr. Chas. D. Smith, Baltimore, Md.
 Dr. Geo. W. Speed, Petersburg.
 Dr. Ralph Alonzo Stata, Oceana.
 Dr. Wilson P. Stephens, Charlottesville.
 Dr. Frank M. White, Miles Store.
 Dr. Geo. Zur Williams, Richmond.
 Dr. Burnett W. Wright, Charlottesville.

The Augusta County Medical Association

Held its annual meeting at the General Wayne Hotel, Waynesboro, on the afternoon of August 3. This was followed by dinner, which was attended by over forty members and guests. The guest speaker was Dr. J. M. Meredith of the University of Virginia, who spoke on "Acute Head Injuries", his lecture being illustrated by lantern slides and case

reports. In the business session, several matters of importance were discussed and Dr. Wilbur M. Phelps of Staunton was elected president for the ensuing year, succeeding Dr. W. A. Murphy, and Dr. Alex. F. Robertson, Jr., was named secretary, succeeding Dr. Lyle Booker of Waynesboro. Vice-presidents will be Dr. H. B. Webb of Waynesboro, Dr. Guy R. Fisher of Staunton, and Dr. A. M. McLaughlin of Waynesboro.

Dickenson-Buchanan County Medical Society.

The annual meeting of this Society was held on the afternoon of July 20 in Grundy, under the presidency of Dr. A. S. Richardson of that place, with about twenty members present. Dr. Hightower, pediatrician with the Department of Clinical and Medical Education of the State Society, gave an interesting talk on "Feeding of Children". Dr. Chichester of the State Health Department introduced Dr. Paul J. Bundy as full-time health officer for Buchanan County. New members admitted at this meeting are: Drs. Leo I. Hallay of McClure; P. J. Bundy and G. D. Rackley of Grundy; Hugh O. Staley of Splashdam; and Herman L. Tutwiler of Patterson. Delegates were also elected for the annual meeting of the State Society. Dr. W. A. Carr of Harman was elected president and Dr. T. C. Sutherland of Haysi was re-elected secretary-treasurer. Following the meeting, the members and visitors were entertained at supper by Drs. Williams at their hospital in Richlands.

Fauquier County Medical Society.

At a meeting of this Society at Warren Green Hotel, Warrenton, on July 28, delegate and alternate were named for the State Society meeting in Danville, and the following were elected officers for the coming year: President, Dr. W. O. Bailey of Leesburg; vice-presidents, Drs. Stewart McBryde of Manassas and Walter G. Trow of Warrenton; secretary-treasurer, Dr. William R. Pretlow of Warrenton. At this meeting, in appreciation of his long and faithful service, Dr. Richard Mason, the retiring president was made president emeritus. The retiring secretary, Dr. Martin B. Hiden, has also filled that office most efficiently for several years.

The Fourth District Medical Society

Held its regular meeting at South Hill on August 16, with the president Dr. C. V. Montgomery of

that place, presiding. The guest speaker was Dr. H. B. Mulholland of the University of Virginia. Drs. Ruth Mason and Philip Jacobson, of Petersburg, and Drs. J. Powell Williams and W. R. Jordan, of Richmond, presented a symposium on Diabetes, the discussion on which was opened by Drs. Harry J. Warthen of Richmond and Dr. Mulholland. Dr. J. Bolling Jones, of Petersburg, presented a paper on Pregnancy Complicated by Uterine Fibroids, with report of a case. At a business session, the various counties composing this Society named their delegates and alternates for the meeting of the Medical Society of Virginia in Danville.

A subscription dinner followed at the Nordan Hotel.

The Mid-Tidewater Medical Society

Held its quarterly meeting at the home of Dr. H. A. Tabb in Gloucester on July 27. In the absence of Dr. Clarence Campbell, president, Dr. James W. Smith of Hayes Store presided. Due to the rainy weather, the attendance was small, and in addition to the speakers, included: Drs. Tabb, James W. Smith, J. D. Clements, S. E. Clinard, E. L. W. Ferry, M. H. Harris, Guy Horsley, S. E. Berger and O. T. Amory.

Dr. G. F. Simpson of Purcellville, President of the Medical Society of Virginia, was present by invitation, and gave a talk on the need for a definite program on the part of the organized medical profession regarding the much discussed problem of socialized medicine. Papers were also presented by the following doctors from Richmond: Dr. J. L. Tabb on X-ray Treatment of Sinusitis, Dr. W. L. Peple on Clinical Classification and Treatment of Cancer of the Cervix, Dr. James H. Smith on Abnormalities of the Thyroid, and Dr. D. M. Faulkner on Treatment of Fracture of the Hip with the Nail.

Delegates and alternates were named for the approaching meeting of the State Society, following which the Society adjourned to meet at Arlington Lodge, Millers Tavern, on the fourth Tuesday in October.

Scott County Medical Society.

At the annual meeting of this Society, Dr. C. R. Fugate of Clinchport was elected president and Dr. V. W. Quillen of Nickelsville vice-president. Dr. J. M. Dougherty, Jr., of Gate City was re-elected secretary-treasurer. At this time, delegate and alternate were also named for the Danville meeting of the State Society.

News Notes

Don't Forget Your Date in Danville,

October 4, 5 and 6—on the occasion of the 69th annual meeting of the Medical Society of Virginia. The Preliminary Program appears in this issue of the MONTHLY, as also reports from the various committees. Look these over NOW so you may be prepared to ask any questions you wish at the meeting, and vote on them. All members are welcome to attend the sessions of the House of Delegates, though only delegates have the right to vote.

As last year, there will be round-table discussions and interesting exhibits. The Local Committee says that the floor show with the subscription dinner is to be a professional one. There will also be the usual tournament for the golfers. Everything will be in readiness for your pleasure and interest. Make your reservations and COME!

Round-Table Discussions in Danville.

The Program of the Medical Society of Virginia, appearing in this issue of the MONTHLY, includes Round-Table Discussions on a number of subjects. The first five subjects were selected by the Program Committee with a view to having topics of especial interest for the general practitioner. The leaders of these ask that members send in questions in advance, if possible, as it is believed this will add greatly to the interest of these gatherings.

Several of the special medical societies are arranging to sponsor Round Tables also, and these likewise will be open to all members of the Society. Prior to the Round Tables, these groups will have luncheon meetings for discussing matters of peculiar interest to them, election of officers, etc.

Appointed Superintendent of Central State Hospital.

Dr. Meade S. Brent, since 1924 assistant superintendent at Central State Hospital, Petersburg, has been appointed Superintendent of that institution, succeeding Dr. H. C. Henry who was recently named to the position of State Hospital Director.

Married.

Dr. Andrew Matthews McLaughlin of Waynesboro and Miss Betty Watkins Martin of Catawba Sanatorium, August 27.

Dr. Clarence Conway Chewning, Jr., of Bowling Green and Miss Alice Louise Thompson of Richmond, July 26.

Dr. Lewis Betty Staton and Miss Jeanette Bryce, both of Richmond, August 2.

Dr. Jacob Himi Kress and Dr. Esta Joyce Levy, both graduates of the Medical College of Virginia, in August. They will make their home in Durham, N. C., where Dr. Kress is at present on the resident staff of Duke Hospital.

News of County Health Departments.

A separation has been effected in the Alleghany-Botetourt-Rockbridge Health District. Alleghany and Botetourt Counties now constitute a separate Health Department with Dr. James H. Gordon as Health Officer located in Covington. Dr. Robert P. Cooke will continue as Health Officer of the Rockbridge County-Lexington Health Department, with headquarters at Lexington.

Dr. J. N. Dudley has been transferred to the position of Health Officer of the Southside Health District with headquarters in Farmville.

Dr. William Y. Garrett has been appointed Health Officer of the Northampton County Health Department to succeed Dr. J. N. Dudley, who formerly filled that position.

Dr. Eugene Bowie Shepherd has been appointed Assistant Health Officer of the Pittsylvania County Health Department with headquarters in Chatham.

Dr. Charles H. Bondurant, for sometime at Bedford, Va., has been appointed Health Officer of the Wythe County Health Department, with headquarters at Wytheville.

Medical College of Virginia News.

The session opening the second century of the Medical College of Virginia will begin September 19 with convocation exercises at twelve o'clock noon.

Major faculty promotions for the session 1938-39 are as follows: Dr. Stuart Michaux, professor of gynecology; Dr. R. H. Courtney, professor of ophthalmology; Dr. R. Finley Gayle, professor of neuropsychiatry; Dr. Thomas W. Murrell, professor of dermatology and syphilology; Dr. Lee E. Sutton, Jr., professor of pediatrics; Dr. William D. Suggs, assistant professor of gynecology. Dr. Wyndham B. Blanton resigned last session as professor of the history of medicine and has been made associate professor of medicine. Dr. Joseph F. Geisinger has been appointed professor of clinical urology.

In recognition of the many years of splendid service to the college the following have been made emeritus professors: Dr. St. George T. Grinnan, emeritus professor of pediatrics; Dr. Emory Hill, emeritus professor of ophthalmology; Dr. E. P. McGavock, emeritus professor of dermatology and syphilology; Dr. Charles R. Robins, emeritus professor of gynecology, and Dr. Beverley R. Tucker, emeritus professor of neuropsychiatry.

In the school of dentistry Dr. Grant Van Huysen resigned as assistant professor of anatomy and Dr. Alton Brashear has been appointed in his place as associate in anatomy. Dr. Webb B. Gurley resigned as assistant professor of operative dentistry and Dr. H. D. Coy has joined the staff as professor of operative dentistry. Dr. A. Hubert Fee has been promoted to assistant professor of operative dentistry. Dr. Robert F. Eastman has been appointed assistant in operative dentistry and Dr. S. A. Lipford, assistant in prosthetic dentistry.

In the school of pharmacy Dr. J. A. Reese will return from Florida where he has been completing work for his Ph. D. degree. He has been promoted to assistant professor of pharmacognosy. Dr. E. L. Outhouse has been appointed assistant in biochemistry, and Mr. Roscoe D. Hughes, associate in biology.

In the school of nursing Miss Frances Helen Zeigler, dean of the school of nursing, and Miss Lulu K. Wolf, associate professor of nursing, have resigned to accept similar positions at Vanderbilt University. Miss Ann Parsons has been made acting dean of the school of nursing for the coming session. Miss Marguerite Nicholson has been appointed instructor in nursing, as has Miss Juanita Loope, to continue the work done by Miss Wolf.

The Public Works Administration has made a grant of \$880,623.00 towards the construction of a new hospital and the rehabilitation of the historic Egyptian Building. The total construction cost is estimated at \$1,920,441.00. It is anticipated that the new building will be ready for occupancy in about sixteen months after construction is under way.

Dr. Sidney Trattner

Announces the removal of his office to 716 Central National Bank Building, Richmond, where he is engaged in practice of diseases of the eye.

Dr. Joseph M. Hitch,

Who recently completed a service fellowship in dermatology and syphilology at the University of Virginia, Department of Medicine, has located in Raleigh, N. C., where he will continue the practice of these specialties in the Professional Building, instead of at address given in the last MONTHLY.

Tennis Court Given Hospital as a Memorial.

A tennis court has been presented to the King Edward VII Memorial Hospital at Hamilton, Bermuda, by Mrs. Gladys Trott Trimingham of Bermuda, in memory of her father, the Hon. Dr. Dudley C. Trott, who died twelve years ago while actively engaged in his profession on the Islands. The court is intended for use by the internes and nurses of the hospital. She also gave a silver cup for annual competition, these gifts to form a memorial in perpetuity.

Dr. H. G. Hudnall,

After six weeks at the Massachusetts General Hospital, opened offices in the Dew Building, Covington, early in August, for the practice of internal medicine.

Dr. Thomas Wheeldon,

Richmond, was elected to membership in the American Rheumatism Association at its annual meeting in June.

The International Assembly of the Inter-State Postgraduate Medical Association of North America

Will be held in the public auditorium of Philadelphia, Pennsylvania, October 31, November 1, 2, 3 and 4, 1938. All scientific and clinical sessions will take place in the auditorium. Hotel headquarters will be the Benjamin Franklin Hotel.

The members of the medical profession of Phila-

delphia are correlating for the clinics, an abundance of hospital material representing various types of pathological conditions which will be discussed by the contributors to the program.

Pre-assembly and post-assembly clinics will be held in the Philadelphia Hospitals on Saturday, October 29 and Saturday, November 5.

In the neighborhood of eighty distinguished teachers and clinicians will appear on the program, a tentative list of which may be found on page 2 of the advertising section of this Journal. The subjects and speakers have been selected to consider practically all the subjects of greatest interest to the medical profession in general.

A full program of scientific and clinical sessions will take place every day and evening of the Assembly, starting each morning at 8:00 o'clock. On account of the fullness of the program, restaurant service will be available at the auditorium at moderate prices.

The members of the profession are urged to bring their ladies with them as a very excellent program is being arranged for their benefit by the Ladies' Committee. Philadelphia has many places of historic and other interests, which will make this year's program especially attractive to them.

It is very important that you make your hotel reservation early by writing Mr. Thomas E. Willis, Chairman of the Hotel Committee, Chamber of Commerce Building, 12th and Walnut Streets, Philadelphia, Pa.

The Association, through its officers and members of the program committee, extends a very hearty invitation to all members of the profession in good standing in their State and Provincial Societies to attend the Assembly. The registration fee is \$5.00.

Dr. Elliott P. Joslin, Boston, Mass., is President; Dr. George W. Crile, Cleveland, Ohio, Chairman, Program Committee, and Dr. William B. Peck, Freeport, Illinois, Managing-Director.

The Southwestern Virginia Medical Society

Is to hold its regular semi-annual meeting in Blacksburg on September 22, for which the usual interesting and pleasant program is being planned. Dr. P. S. Smith of Abingdon is president and Dr. James P. King of Radford secretary.

Dr. Frank A. Strickler,

Who has for a time been a member of the medical staff of St. Albans Sanatorium at Radford, has lo-

cated in Roanoke, with offices at 501 Medical Arts Building, where he will be engaged in the practice of neurology and psychiatry.

Dr. J. Harris Pierpont,

Of the class of '88, Medical College of Virginia, and a prominent physician and surgeon of Pensacola, Fla., was honored by the physicians of that place on August 2, in a ceremony commemorating his fiftieth anniversary as a physician in Escambia County, Florida. On this occasion he was presented with a scroll signed by members of his local society, at the Pensacola Hospital, following which refreshments were served. Dr. Pierpont is the oldest living president of the Florida State Medical Association.

Dr. W. P. Stephens

Has recently opened his office in Charlottesville for general practice and surgery. He is a graduate of the University of Maryland in 1934, since which time he has been interne, resident surgeon, and chief resident, respectively, in the Maryland General Hospital, Baltimore.

Dr. Thomas N. Spessard,

Who has been engaged in the practice of neurology and neurosurgery in Roanoke for several years, has moved to Norfolk, where he has formed a partnership with Dr. Frank H. Redwood, with offices in Wainwright Building.

Dr. Ayer C. Whitley,

Class of '35, Medical College of Virginia, recently at C. C. C. camps in Montana, has opened offices at Palmyra for the practice of his profession.

Welcome to the American Journal of Medical Jurisprudence!

The first issue of this journal will be in the mail on September 15 and monthly thereafter. It will be published under the editorship of Dr. Frederick C. Warnshuis, well-known through his connection with the Michigan and California State medical organizations. Dr. George B. Magrath of Harvard University is honorary editor-in-chief. These will be assisted by an excellent editorial board selected from various sections of the country. It is the mouthpiece of the American Medico-Legal Association and is intended to assist members of the medical and dental professions in meeting their medico-legal problems. Editorial offices are at 137 Newbury Street, Boston, Massachusetts.

Dr. J. M. Habel, Jr.,

Recently on the resident staff of the Medical College of Virginia Hospitals in Richmond as resident in obstetrics, is now associated with Dr. J. C. Rawls of Franklin, in general practice.

Dr. Harold W. Kinderman,

Major, U. S. A., retired, recently at Wicomico Church, has been appointed medical director of Dixie Hospital at Hampton, and was elected to membership on the staff on July 1.

Dr. Warren F. Draper,

For several years State Health Commissioner of Virginia, until he was called to resume his work in Washington as assistant surgeon general with the U. S. Public Health Service, has been named to the newly-created position of executive officer of the Public Health Service.

Dr. G. D. Vermilya,

For a time on the surgical staff at St. Luke's Hospital, Richmond, has recently been made chief surgeon of the Hickory Memorial Hospital, Hickory, N. C.

Dr. Hines Honored.

In recognition of his service to organized medicine in South Carolina, the July issue of the *Journal of the South Carolina State Medical Association* was dedicated to Dr. Edgar A. Hines of Seneca, for more than a quarter of a century secretary of the South Carolina Medical Association and for a number of years editor of its *Journal*. Since 1896, he has been continuously engaged in some service for the doctors of his State. He was also presented with a silver tray, pitcher and goblets at the annual meeting of the State Association this Spring.

Dr. Charles S. Gresham,

Formerly of St. Charles, but who has taken special work in obstetrics and gynecology during the past year in Pittsburgh and Cleveland, has located in Johnson City, Tenn., where he will combine the above-named specialties with general practice. His offices are in Hamilton National Bank Building.

Course for Medical Department Reservists.

The tenth annual Inactive Status Training Course for Medical Department Reservists of the Army and Navy will be held at the Mayo Foundation, Rochester, Minn., October 3 to 15. The general plan of former years with regard to clinics and lectures

will be followed. The last three days of the course will be merged with the meeting of the Association of Military Surgeons of the United States.

All Medical Department Reservists are eligible for enrollment. Approved applicants will be enrolled upon the recommendation of the Surgeon of the Seventh Corps Area or the Surgeon of the Ninth Naval District. Applications should be made promptly and should be forwarded through the respective Reserve headquarters of the officer concerned.

The Third International Goiter Conference

Is to be in Washington, September 12-14, with headquarters at the Mayflower Hotel. This is just a reminder to those interested as notices of this meeting have appeared in the MONTHLY previously. Further information may be obtained from Dr. W. Blair Mosser, Corresponding Secretary, Kane, Pa.

Wanted—

A physician between Roanoke and Bedford, Va., a distance of thirty miles, approximate population of five thousand. For information, write Mrs. L. A. Bromena, Montvale, Va. (Adv.)

Wanted—

A set of six or seven volumes of Bickham's Operative Surgery. Write "Bickham's Surgery, care VIRGINIA MEDICAL MONTHLY, 1200 East Clay Street, Richmond, Va. (Adv.)

Home for Convalescences.

A home for the care and treatment of chronic aged and convalescences has been opened at Arrington, Nelson County, Virginia, under the direction of Dr. and Mrs. Fred M. Horsley. Information upon request. (Adv.)

Physician Wanted.

Request has come from a community in southwestern Virginia for an active young physician. Good opening for right man. Address "Physician", care this JOURNAL. (Adv.)

Obituary Record

Dr. Frank Hancock,

Popular physician of Norfolk, in which place he had lived for over forty years, died at his home in that City on August 15, having been in bad health for sometime. He was born in Chesterfield County in 1873, and, upon completion of his academic edu-

cation, studied at the former University College of Medicine, Richmond, from which he graduated in 1896. Dr. Hancock had an excellent record in the World War, having volunteered for service with the French troops, and having been transferred to the American forces when our country entered the conflict. He was formerly health commissioner for Norfolk County and was city physician for Norfolk at the time of his death. He had been a member of the Medical Society of Virginia continuously since 1896. Dr. Hancock was unmarried but is survived by a sister, niece and nephew.

Dr. Samuel Walthall Budd,

Prominent pathologist of Richmond, died at his home just outside of the city on July 27, after an illness of several months. He was a native of Petersburg and fifty-five years of age. After graduating from Hampden-Sydney College, he studied medicine at Johns Hopkins University, from which he received his degree in medicine in 1909, and later took post-graduate work in Germany. Upon his return, he practiced for a time in both Petersburg and Norfolk before locating in this city. Dr. Budd was at one time a member of the faculty of the Medical College of Virginia, a former vice-president of the American Society for the Study of Neoplastic Diseases, and at the time of his death was a member of his State and several other medical associations. He was pathologist to St. Luke's Hospital, the Retreat for the Sick and for several other institutions in addition to his private work. His wife, two sons and a sister survive him.

Dr. Alonzo Augustus Bilisoly,

Portsmouth, died on May 5, death being due to Hodgkin's disease. He was sixty-seven years of age and a graduate in medicine from the University of Maryland in 1893. Dr. Bilisoly had practiced in Portsmouth for forty years and was interested in public spirited and patriotic organizations of his city as well as in his professional work, and was a member of his local and State medical organizations. He volunteered for service during the World War and was a member of the "Volunteer Medical Service Corps". He is survived by his wife, a sister and several nieces and nephews.

Dr. James Carter Giles,

Well-known physician of Danville, died on July 29, after having been in bad health for several

months, though he kept at his work until a few hours before his death. He was born in Chatham, sixty-two years ago and graduated in medicine from the former University College of Medicine, Richmond, in 1903. He is survived by his wife, a son and a daughter.

The Danville-Pittsylvania Academy of Medicine, in which Dr. Giles had always taken an active interest, passed the following resolutions upon his death:

In as much as Dr. J. C. Giles was a member of the Danville-Pittsylvania Academy of Medicine, and gave himself modestly and unselfishly to the work of the Society;

In as much as he was a man of character, and integrity, and a physician who practiced tirelessly, charitably, and diligently;

BE IT RESOLVED: First, That his death deprives the Danville-Pittsylvania Academy of Medicine of a faithful and respected member; the community of an admirable and sympathetic physician;

Second, That a copy of these resolutions be sent to Dr. Giles' family, a copy be sent to the VIRGINIA MEDICAL MONTHLY, and a copy be placed on the records of the Danville-Pittsylvania Academy of Medicine.

Committee { C. W. PRITCHETT,
C. W. PURCELL,
S. C. HALL, JR.

Resolutions on Death of Dr. Ambler.

In the death of Dr. E. C. Ambler, July 11, 1938, The Roanoke Academy of Medicine has lost not only a valuable member, but a physician who embodied the spirit of true medical practice—unselfish service and self-sacrifice, never too busy nor too tired to respond to the call of all who needed help, regardless of class or station. "So becoming weary, he laid himself down by the way-side, and taking his burden for a pillow, fell into that dreamless slumber that is kissing down his eyelids still."

The Roanoke Academy of Medicine extends sympathy to his family and friends in their sorrow.

Committee { G. M. MAXWELL,
T. D. ARMISTEAD,
J. O. BOYD.

Resolutions on Dr. Fletcher J. Wright.

At a called meeting of the Petersburg Medical Faculty held at the Y. M. C. A. on May 8, 1938, the following resolutions were adopted:

WHEREAS, An Ever Wise Providence has removed from our membership our beloved colleague, Doctor Fletcher J. Wright, who for many years has been a leading physician in our city and whose profound knowledge of medicine and great love of his profession and whose high character so commanded the respect and admiration of all of us that we shall always revere his memory; now, therefore, be it

RESOLVED (First), That we, the members of the Petersburg Medical Faculty regret the death of our friend and associate; and,

RESOLVED (Second), That in his death the medical profession of the State and especially our community have sustained a great loss; and,

RESOLVED (Third), That we tender our sympathy to the family of our deceased associate in their bereavement; and,

RESOLVED (Fourth), That a copy of these resolutions be spread upon the minutes of our association, a copy be sent to the family, and to the VIRGINIA MEDICAL MONTHLY and that it also be published in the secular press.

Signed:

J. B. JONES, *Chairman*,
WRIGHT CLARKSON,
L. S. EARLY,
W. M. BOWMAN, *Secretary*.

The Executive Committee of the Virginia Tuberculosis Association, at a meeting on August 11, adopted resolutions on the death of Dr. Wright as follows:

WHEREAS the Virginia Tuberculosis Association has lost a valued director through the death of Dr. Fletcher J. Wright, and the Executive Committee of the Association a loyal and able member, and

WHEREAS suffering humanity lost in him a sympathetic physician who ministered unselfishly to their needs and who fought for the eradication of tuberculosis and the advancement of scientific medicine, now, therefore:

BE IT RESOLVED that the Executive Committee of the Virginia Tuberculosis Association, at this, its first meeting since his death, hereby records its sorrow at the passing of this distinguished physician, charming gentleman and valued friend, Fletcher Johnston Wright,

BE IT FURTHER RESOLVED that these resolutions be spread on the minutes of the Virginia Tuberculosis Association and a copy sent to the family of Dr. Wright and to the VIRGINIA MEDICAL MONTHLY.

Dr. John M. Wheeler,

Noted eye specialist of New York City, died at his summer home in Vermont on August 22, death being due to heart disease. He was professor of ophthalmology at Columbia University and had frequently spoken before medical organizations in Virginia. In 1936 Dr. Wheeler was the recipient of the Leslie Dana Gold Medal for his outstanding achievements in the prevention of blindness and the conservation of vision.

Dr. George Edmund de Schweinitz,

Prominent ophthalmologist of Philadelphia, died August 22, at the age of seventy-nine. He served during the World War as Lieutenant Colonel in the Army Medical Corps and, among other honors, was a former president of the American Medical Association.

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inflammatory conditions of the nose, naso-pharynx, pharynx and tonsils, Neo-Silvol (10 to 25 per cent strength) may be sprayed or swabbed on the involved areas three or four times daily. Neo-Silvol solutions are easily prepared by dissolving the glistening, cream-colored granules in water.

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VIRGINIA MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

69th Annual Meeting, Medical Society of Virginia, Danville, October 4-6, 1938

Vol. 65, No. 10.
WHOLE No. 1036.

RICHMOND, VA., OCTOBER, 1938

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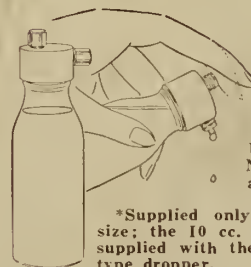
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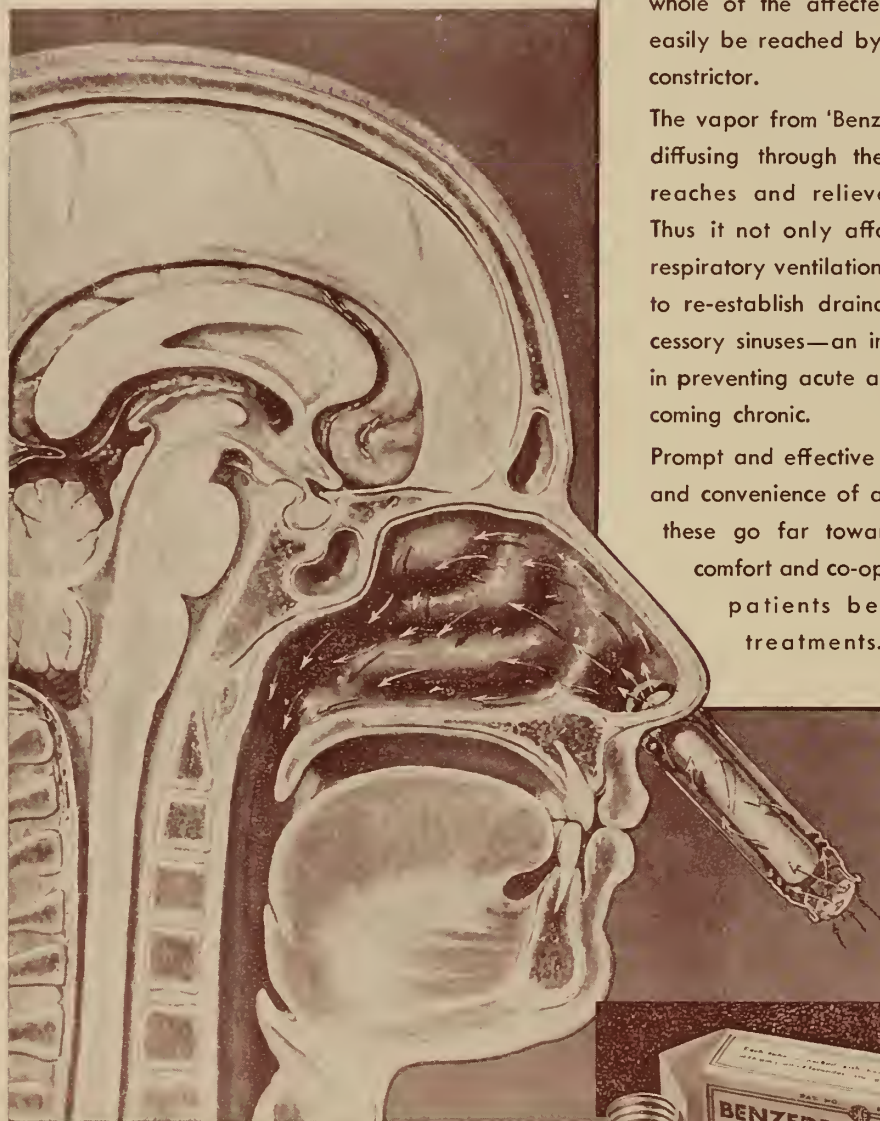
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Virginia Medical Monthly

Official Publication of the Medical Society of Virginia

Vol. 65, No. 10.
WHOLE No. 1036.

RICHMOND, VA., OCTOBER, 1938

\$2.00 A YEAR
25 CENTS A COPY

REPORT OF REFERENCE COMMITTEE ON CONSIDERATION OF THE NATIONAL HEALTH PROGRAM

(Adopted at Special Session of House of Delegates, A. M. A., Chicago, September 17, 1938)

Since it is evident that the physicians of this nation, as represented by the members of this House of Delegates convened in Special Session, favor definite and decisive action now, your committee submits the following for your approval:

1. Under Recommendation I on Expansion of Public Health Services: (1) Your committee recommends the establishment of a federal department of health with a secretary who shall be a doctor of medicine and a member of the President's cabinet. (2) The general principles outlined by the Technical Committee for the expansion of public health and maternal and child health services are approved and the American Medical Association definitely seeks to cooperate in developing efficient and economical ways and means of putting into effect this recommendation. (3) Any expenditure made for the expansion of public health and maternal and child health services should not include the treatment of disease except in so far as this cannot be successfully accomplished through the private practitioner.

2. Under Recommendation II on Expansion of Hospital Facilities: Your committee favors the expansion of general hospital facilities where need exists. The hospital situation would indicate that there is at present greater need for the use of existing hospital facilities than for additional hospitals.

Your committee heartily recommends the approval of the recommendation of the technical committee stressing the use of existing hospital facilities. The stability and efficiency of many existing church and voluntary hospitals could be assured by the payment to them of the costs of the necessary hospitalization of the medically indigent.

3. Under Recommendation III on Medical Care for the Medically Needy: Your committee advocate recognition of the principle that the complete medical care of the indigent is a responsibility of the community, medical and allied professions, and that such care should be organized by local governmental units and supported by tax funds.

Since the indigent now constitute a large group in the population, your committee recognizes that the necessity for state aid for medical care may arise in poorer communities and the federal government may need to provide funds when the state is unable to meet these emergencies.

Reports of the Bureau of the Census, of the U. S. Public Health Service and of life insurance companies show that great progress has been made in the United States in the reduction of morbidity and mortality among all classes of people. This reflects the good quality of medical care now provided. Your committee wishes to see continued and improved the methods and practices which have brought us to this present high plane.

Your committee wishes to see established well coordinated programs in the various states in the nation for improvement of food, housing and the other environmental conditions which have

the greatest influence on the health of our citizens. Your committee wishes also to see established a definite and far-reaching public health program for the education and information of all the people in order that they make take advantage of the present medical service available in this country.

In the face of the vanishing support of philanthropy, the medical profession as a whole will welcome the appropriation of funds to provide medical care for the medically needy, provided first, that the public welfare administrative procedures are simplified and coordinated; and second, that the provision of medical services is arranged by responsible local public officials in cooperation with the local medical profession and its allied groups.

Your committee feels that in each state a system should be developed to meet the recommendation of the National Health Conference in conformity with its suggestion that "The role of the federal government should be principally that of giving financial and technical aid to the states in their development of sound programs through procedures largely of their own choice."

4. Under Recommendation IV on a General Program of Medical Care: Your committee approves the principle of hospital service insurance which is being widely adopted throughout the country. It is capable of great expansion along sound lines, and your committee particularly recommends it as a community project. Experience in the operation of hospital service insurance or group hospitalization plans has demonstrated that these plans should confine themselves to provision of hospital facilities and should not include any type of medical care.

Your committee recognizes that health needs and means to supply such needs vary throughout the United States. Studies indicate that health needs are not identical in different localities but that they usually depend on local conditions and therefore are primarily local problems. Your committee therefore encourages county or district medical societies, with the approval of the state medical society of which each is a component part, to develop appropriate means to meet their local requirements.

In addition to insurance for hospitalization we believe it is practicable to develop cash indemnity insurance plans to cover, in whole or in part, the costs of emergency or prolonged illness. Agencies set up to provide such insurance should comply with state statutes and regulations to insure their soundness and financial responsibility and have the approval of the county and state medical societies under which they operate.

Your committee is not willing to foster any system of compulsory health insurance. Your committee is convinced that it is a complicated, bureaucratic system which has no place in a democratic state. It would undoubtedly set up a far-reaching tax system with great increase in the cost of government. That it would lend itself to political control and manipulation there is no doubt.

Your committee recognizes the soundness of the principles of Workmen's Compensation laws and recommends the expansion of such legislation to provide for meeting the costs of illness sustained as a result of employment in industry.

Your committee repeats its conviction that voluntary indemnity insurance may assist many income groups to finance their sickness costs without subsidy. Further development of group hospitalization and establishment of insurance plans on the indemnity principle to cover the cost of illness will assist in solution of these problems.

5. Under Recommendation V on Insurance Against Loss of Wages During Sickness: In essence the recommendation deals with compensation of loss of wages during sickness. Your committee unreservedly endorses this principle as it has distinct influence toward recovery and tends to reduce permanent disability. It is, however, in the interest of good medical care that the attending physician be relieved of the duty of certification of illness and of recovery, which function should be performed by a qualified medical employee of the disbursing agency.

6. To facilitate the accomplishment of these objectives, your committee recommends that a committee of not more than seven physicians representative of the practicing profession under the chairmanship of Dr. Irvin Abell, President of the American Medical Association, be appointed by the Speaker to confer and consult with the proper federal representatives relative to the proposed National Health Program.

THE INCIDENCE AND IMPORTANCE OF HUMAN INTESTINAL
PARASITES IN TIDEWATER VIRGINIA.*

WALTER B. MARTIN, M.D.,
Norfolk, Virginia.

In presenting certain figures bearing upon the incidence of various intestinal parasites in man in the Tidewater section of Virginia and North Carolina, it is hoped that more general recognition of their importance may be obtained and that interest in parasitic infection as the cause of a rather varied symptomatology may be stimulated.

This report is based upon the findings in the stools of 9,663 consecutive cases that have undergone general diagnostic study in my office from September, 1920, to March, 1938. In relatively few of these cases does the nature of the complaint, the history, or the physical examination point directly to the probable presence of parasites. This possibility, however, was often suggested by certain symptoms, such as abdominal pain and diarrhoea, or by an increased percentage of eosinophils in the blood. These cases have not been selected, but the findings are the result of routine examination of the stools of patients coming in for general examination. This material represents a fairly good cross-section of the population encountered in private practice. Clinic material, due to the social and economic status of such patients, would probably show a higher percentage of infestation.

The larger proportion of these patients have lived in urban surroundings. A smaller number came from small towns and rural areas. The total number of individuals found infested with some form of intestinal parasite is 356.

The method of Bass is used in searching for ova. Specimens are brought to the office by each patient. If there is any reason to suspect the presence of

for one minute to throw down any ova that may be present. The supernatant fluid, containing vegetable debris, is poured off, water added and the specimen again centrifuged. This process is repeated until the supernatant fluid is practically water clear. In searching for flagellates, a bit of the specimen emulsified in a drop of water on a slide, or a bit of the mucous or fluid specimen in cases of active diarrhoea, is sufficient.

The classification of the parasites in the order of their frequency is as follows:

| | |
|----------------------------------|-------|
| Total cases examined | 9,663 |
| Total number infested | 356 |
| <i>Giardia intestinalis</i> | 114 |
| <i>Trichomonas intestinalis</i> | 82 |
| <i>Necator americanus</i> | 48 |
| <i>Strongyloides stercoralis</i> | 35 |
| <i>Trichuris trichiura</i> | 27 |
| <i>Amoeba histolytica</i> | 13 |
| <i>Ascaris lumbricoides</i> | 11 |
| <i>Chilomastix mesnili</i> | 10 |
| <i>Taenia nana</i> | 7 |
| <i>Amoeba coli</i> | 4 |
| <i>Oxyuris vermicularis</i> | 3 |
| <i>Dibothriocephalus latus</i> | 1 |
| <i>Ancylostoma duodenale</i> | 1 |

This shows a percentage of infestation of 3.68, a matter certainly worthy of comment.

In most instances only one examination of the stool was made. It seems probable that repeated examination would reveal a still higher percentage.

The age of these patients varied from four to seventy-three. Only 12 per cent of them were under twenty years of age, and only 3 per cent under ten years.

| AGE DISTRIBUTION | | | | | | | | |
|------------------|------|-------|-------|-------|----------|-------|-------|-------|
| | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 |
| No. of Cases | 10 | 29 | 60 | 104 | 74 | 44 | 10 | 4 |
| Per cent | 3 | 9 | 18 | 31 | 22 | 13 | 3 | 1 |
| Male | | | | 160 | Per cent | | | |
| Female | | | | 175 | Per cent | | | |
| | | | | | 48 | | | |
| | | | | | 52 | | | |

amoeba a warm specimen is collected in the office by means of the proctoscope if necessary.

The specimen is made fluid by addition of water, strained through gauze, and centrifuged at low speed

*Read before the Section on Medicine at the fifteenth annual meeting of the Virginia Academy of Science, at Blacksburg, Va., May 6, 1938.

While the possibility of intestinal parasites is often considered in children, we have been prone not to consider this possibility in adults. The distribution as to sex is nearly equal. In this group 48 per cent are in males and 52 per cent in females.

The two parasites most frequently found belong

to the flagellate group; that is, *Giardia intestinalis* and *Trichomonas intestinalis*. There has been considerable difference of opinion as to the pathogenicity of the members of the flagellate group. I believe, however, that a comparison of the clinical symptoms of persons infested with flagellates with those in which hookworm or *Strongyloides* are found will show as high a pathological index in the flagellate group as in the others.

There seems to be little doubt that many individuals harboring various parasites are apparently unharmed by their presence, but in other instances the parasite is responsible for severe and varied symptoms.

The association of an increase in the eosinophils of the blood with the presence of parasites in the intestine has long been noted. It is not an invariable accompaniment, however. The percentage found in these cases varied from none to 46.4 per cent. The following table details the information in 310 cases.

| | | <i>Eosinophils</i> | <i>Per cent of Cases</i> | <i>Highest per cent</i> | <i>Average per cent</i> |
|--|------------------|--------------------|--------------------------|-------------------------|-------------------------|
| | <i>No. Cases</i> | <i>Over 2%</i> | <i>Over 2%</i> | <i>Eosinophils</i> | <i>Eosinophils</i> |
| <i>Giardia intestinalis</i> | 102 | 33 | 32 | 13 | 1.8 |
| <i>Trichomonas intestinalis</i> | 76 | 22 | 29 | 5 | 1.5 |
| <i>Necator americanus</i> | 42 | 26 | 62 | 20.5 | 5.5 |
| <i>Strongyloides stercoralis</i> | 28 | 19 | 68 | 45 | 8.6 |
| <i>Trichuris trichiura</i> | 21 | 8 | 38 | 14.5 | 2.5 |
| <i>Amoeba histolytica</i> | 12 | 5 | 42 | 8.0 | 2.6 |
| <i>Ascaris lumbricoides</i> | 11 | 5 | 45 | 6.5 | 2.7 |
| <i>Chilomastix mesnili</i> | 10 | 4 | 40 | 4.5 | 1.8 |
| <i>Taenia nana</i> | 8 | 4 | 50 | 4.5 | 2.2 |
| Total | 310 | 126 | 41 | 45 | |

It is to be noted that there is a wide range in the response of the eosinophils in the blood to the presence of intestinal parasites, but that in only 41 per cent on the average are the eosinophils increased to over 2 per cent. The finding of a normal number of eosinophils in the blood smear should not deter one from looking for parasites, though an increase in these cells certainly suggests the possibility of their presence.

Anæmia of a moderately severe grade has been

found in a considerable number of cases. A hemoglobin percentage as low as thirty has been encountered when there was no other ascertainable cause for the anæmia. In most of the cases anæmia of a severe grade was not found. The following table shows the percentage of cases having hemoglobin below 85 per cent.

| | |
|--|-----|
| <i>Giardia intestinalis</i> | 40% |
| <i>Trichomonas intestinalis</i> | 35% |
| <i>Necator americanus</i> | 20% |
| <i>Strongyloides stercoralis</i> | 50% |
| <i>Trichuris trichiura</i> | 33% |
| <i>Amoeba histolytica</i> | 22% |
| <i>Ascaris lumbricoides</i> | 50% |
| <i>Chilomastix mesnili</i> | 29% |
| <i>Taenia nana</i> | 75% |

The gastric contents have been examined in ninety cases. Ten of these showed a definite hyperacidity; twenty a hypoacidity, and six a complete anacidity. Thirty-six cases, or forty per cent, showed definite

deviation from normal in the acidity of the gastric contents.

An analysis of the occurrence of the various symptoms, such as headache, nausea, abdominal pain, diarrhoea, weakness, and flatulence, reveals the presence of one or more of these symptoms in the majority of cases. The presence of parasites has not been the sole cause of these symptoms in all cases, but in many instances no other causative factor was found. The distribution of these various complaints

VARIATION IN GASTRIC ACIDITY—90 CASES

| | <i>Hyperacidity</i> | <i>Normal Acidity</i> | <i>Hypoacidity</i> | <i>Anacidity</i> | <i>Total Cases</i> |
|--------------------------------|---------------------|-----------------------|--------------------|------------------|--------------------|
| No. of Cases | 10 | 54 | 20 | 6 | 90 |
| Average Per Cent Acidity | 59 | 32 | 13 | 0 | |
| Per Cent of Total | 11.1 | 60 | 22.3 | 6.6 | 40% |

according to the particular parasite infesting the individual is shown in the following tables:

cepted as being of pathological importance when found in the human intestinal canal.

| | | Abdominal | | | | | Abdom. Sympt. | |
|---------------|--------------|-----------|--------|------|-----------|------------|---------------|-------------|
| | | Headache | Nausea | Pain | Diarrhoea | Flatulence | Weakness | One or More |
| Giardia | No. of Cases | 92 | 44 | 30 | 35 | 13 | 26 | 40 |
| | Per Cent | 48 | 33 | 38 | 14 | 28 | 43 | 77 |
| Trichomonas | No. of Cases | 57 | 27 | 13 | 32 | 13 | 28 | 25 |
| | Per Cent | 47 | 23 | 56 | 23 | 44 | 50 | 91 |
| Necator amer. | No. of Cases | 40 | 14 | 9 | 18 | 1 | 22 | 13 |
| | Per Cent | 35 | 22 | 45 | 2 | 55 | 32 | 80 |
| Strongyloides | No. of Cases | 23 | 8 | 10 | 14 | 1 | 10 | 9 |
| | Per Cent | 35 | 43 | 61 | 4 | 43 | 39 | 75 |
| Total | No. of Cases | 212 | 93 | 62 | 99 | 28 | 86 | 87 |
| | Per Cent | 44 | 29 | 47 | 13 | 41 | 41 | 81 |

It can be seen from these figures that patients infested with the flagellates have as wide a range and as great a frequency of symptoms as those with hookworm or Strongyloides. The comparison is made with these two parasites as they are generally ac-

No effort is made to draw any sweeping conclusions from the above data. It is presented as a factual record of what has been found in a series of cases carefully studied.

339 Boush Street.

UNDESIRABLE EFFECTS FOLLOWING THE USE OF SULFANILAMIDE.

CHAS. C. HASKELL, M.D.,
Richmond, Virginia.

The Trefouels, Nitti, and Bovet⁵² presented evidence that the rather complex compounds used by Domagk¹⁶ and in the earlier clinical investigations owe their activity to a relatively simple substance, p-amino-benzene-sulfonamide, or sulfanilamide. This view has been supported by other workers^{9, 10, 19, 29} and seems to be generally accepted in America; therefore, in the discussion which follows the name sulfanilamide will be used to cover the whole class of these preparations, except where it seems desirable to be more specific.

With the better controlled animal experimentation and clinical investigation initiated by Colebrook and Kenny¹⁴ in England and by Long and Bliss²⁹ in this country, the belief at first gained acceptance that sulfanilamide was of value chiefly or exclusively in the treatment of infections by hemolytic streptococci. Experience during the past two years has demonstrated, however, that the drug is almost equally valuable in the therapy of meningococcal and gonococcal infections; and there is considerable sug-

gestive evidence that its therapeutic action may be advantageously used in many other types of infection; certainly, as a urinary antiseptic, sulfanilamide seems capable of destroying a number of different organisms. As regards the present status of the clinical employment of sulfanilamide, nothing can be added to the excellent review of Long and Bliss.³⁰ These authors, as well as many others, have called attention to certain undesirable effects seen in association with or following sulfanilamide administration and have emphasized the need for care in the clinical employment of this drug. Not only do some members of the profession seem to have ignored these warnings, but, through articles in the lay press, knowledge of the curative value of the sulfonamides has been widely disseminated without proper emphasis having been laid on the dangers incident to their use. Unfortunately, in only a few localities have restrictions been placed on the sale of sulfanilamide and a large "over-the-counter" business in it has developed, with the consequence that an unknown

number of patients are taking this potent drug without the least supervision. A review of the available reports of undesirable effects following sulfanilamide administration may be of value, both in lessening the likelihood of repetition of such unfortunate experiences and also in tending to prevent a most remarkable therapeutic agent from falling into undeserved disrepute through careless or unintelligent use.

Minor discomfort occurs in a considerable proportion of patients subjected to sulfanilamide therapy, the common manifestations being anorexia, nausea, general malaise, dizziness, mental confusion, and peripheral sensory disturbances. A rise in temperature is not uncommon,²¹ and rashes, usually morbilliform,^{21, 34, 49} are rather frequently seen. In most instances, these disturbances are without serious significance, usually disappearing on discontinuance of medication, or, indeed, not requiring such discontinuance.

In 1937 Southworth⁵⁰ called attention to the fact that in patients receiving sulfanilamide treatment there frequently occurs a fall in the carbon dioxide combining power of the plasma—a fall that he interpreted as indicating the presence of acidosis. It is true that in acidosis there is a reduction in the carbon dioxide combining power of the plasma; it does not necessarily follow, conversely, that such a reduction always means that acidosis exists. The consistently alkaline urine in sulfanilamide-treated patients, noted by Long and Bliss³¹ and by Marshall *et al.*³² does not seem compatible with acidosis; to Basman and Perley³ it suggests, rather, a carbon dioxide deficit *alkalosis*. The investigations of Hartmann, Perley, and Barnett²² seem to prove quite conclusively that the usual disturbance in the acid-base balance produced by sulfanilamide is actually an *alkalosis*. In some as yet unexplained way, the drug causes excessive respiratory activity, with consequent reduction of the alveolar carbon dioxide and a compensatory fall in the carbon dioxide of the plasma; this leads to a *rise* in the plasma pH and the excretion of bicarbonate by way of the kidneys to overcome the alkalosis. In one case mentioned by Hartmann and his associates, the administration of a single large dose of sulfanilamide *alone* was sufficient to cause such a degree of alkalosis that tetany occurred.

The conclusions of Southworth have, apparently, been accepted by a number of physicians who have

applied not even the single test employed by this author but have routinely administered bicarbonate of soda with each dose of sulfanilamide to prevent or overcome this mythical "acidosis". Such a procedure, while exceedingly unscientific, may have no serious consequences, the excess bicarbonate being excreted by the kidneys; however, in the presence of impaired renal function, actual injury may be produced. It would seem most advisable not to apply this adjuvant alkali therapy unless the existence of acidosis has been determined by appropriate means.

In 1936, Colebrook and Kenny¹⁴ noted the occurrence of cyanosis, associated with sulfhemoglobinemia, in three patients under sulfanilamide therapy. Similar observations were made by Frost,¹⁸ Discombe,¹⁵ Paton and Eaton,⁴³ Bensley and Ross,⁴ and Archer and Discombe.² The view at first held was that the cyanosis following administration of sulfanilamide was due to the formation of sulf- or methemoglobinemia, either of which might be of serious import, especially in patients already suffering from anoxemia. Considerable speculation as to the mechanism involved in the production of sulfhemoglobin was indulged in by the English authors, some of whom felt that administration of magnesium sulphate might be responsible for its formation in the blood, although Archer and Discombe were of the opinion that hydrogen sulfide, absorbed from the intestine, was the source of the sulfur, sulfanilamide acting as a catalyst in the reaction. They advise against the use of any cathartic capable of producing watery stools and the avoidance of a diet rich in sulfur. Later investigations have shown that the cyanosis in sulfanilamide-treated patients is not always and may not often be due to the presence of met- or sulfhemoglobin in the blood,^{33, 46} moreover, instances are on record in which the cyanosis did not deepen in spite of continued administration of sulfanilamide; on the contrary, it might even disappear.^{13, 33, 46} To ignore the cyanosis, however, seems scarcely justifiable in the present state of our knowledge; in the case reported by Frost,¹⁸ as well as the one observed by Bensley and Ross,⁴ there was evidence that the oxygen-carrying power of the blood was decreased and this was definitely shown to be true in a patient studied by Mull and Smith,⁴⁰ although in a more extended series, King and Leslie²⁷ failed to encounter a single instance in which the oxygen saturation of the blood fell sufficiently to explain the cyanosis. Until more informa-

tion is gained, it would appear by far the wiser course to consider cyanosis a warning for even closer observation of the patient and as an indication for discontinuance of the sulfanilamide if other indications of anoxia occur. Spectroscopic examination of the blood, as well as determinations of its oxygen-carrying capacity would be most desirable in these cases; unfortunately, such determinations are possible only in the larger institutions as a rule.

From its chemical structure a deleterious action of sulfanilamide on the hematopoietic system of certain individuals was predicted early in the course of its therapeutic employment. Early in 1937, Massell³⁴ noted the occurrence of a mild leukopenia in a patient with rheumatic fever who had been given sulfanilamide, the count returning to normal on discontinuance of the drug. Shortly afterward, Trumper⁵³ reported two instances in which patients with an initial leukocytosis showed a reduction in the white cell count following administration of sulfanilamide, with recurrence of the leukocytosis on ceasing administration of the drug. McIntosh *et al.*³⁶ considered of minor importance the occurrence of "granulocytopenia" in a child to whom they had given sulfanilamide.

Unfortunately, not all instances of leukopenia associated with sulfanilamide administration have terminated so happily, as will be seen from most of the following brief summaries.

Plumer's patient,⁴⁴ suffering from subacute bacterial endocarditis, was given 105 grains of sulfanilamide over a period of six days, at the end of which time the white cell count had dropped to 400 and death occurred.

The case reported by Borst⁸ occurred in a woman of 61, treated with one of the more complex dyes for pyelocystitis over 26 days; there was a drop in the total white count to 960 and death occurred.

A man with "acute rheumatism" observed by Young⁵⁶ had white counts ranging from about 8000 to 10000 on numerous occasions during an eighteen-day treatment with daily doses of forty-five grains of sulfanilamide. The drug was discontinued because of apparent ineffectiveness; four days later, the white count was 1800 and death ensued the following day.

Mitchell and Trachsler³⁸ record complete agranulocytosis and death in a child with Still's disease treated with unknown amount of sulfanilamide.

Bernstein⁶ used sulfanilamide orally and Pron-tosil by injection in treatment of a six-months'-old

infant, critically ill with bronchopneumonia, bilateral mastoiditis, and erysipelas. Complete agranulocytosis developed, progressing to a fatal termination uninfluenced by injections of liver extract, pentnucleotide, and transfusion.

Model's³⁹ patient was a man of twenty years' age, suffering from acute rheumatic fever. For eighteen days, he was treated with sulfanilamide in a daily dosage of forty-five grains. Two days after discontinuing the drug, the white count was found to be 600, dropping to 300 the same evening. In spite of pentnucleotide and transfusion, the patient succumbed.

By the use of pentnucleotide and "campolon", Jennings and Southwell-Sander²⁶ were able to effect the recovery of their patient, a woman who had been treated with sulfanilamide for ulcerative colitis, and whose white count fell to 444, with complete absence of granulocytes.

O'Connell⁴¹ reported the case of a seaman who received a total of 335 grains of sulfanilamide over a week in treatment of gonorrheal urethritis. At the expiration of this time, the drug was discontinued because of "acute catarrhal fever"; but there was reason to believe that the patient subsequently practiced self-medication. Eighteen days later, he was admitted to hospital, complaining of fever and sore throat. His total white cell count was 3500, with complete absence of polymorphonuclears from stained smear. In spite of pentnucleotide, leukocytic extract, and oxygen inhalation, patient succumbed three days later.

The case coming under the observation of Schwartz *et al.*⁴⁸ was in an apparently vigorous man of thirty-two, who was given a total of 48.6 grams sulfanilamide in treatment of a penile ulcer, supposedly chancroidal in nature. The initial white cell count was 8000; at the end of eighteen days' sulfanilamide therapy, the white cells had dropped to 2000, with complete absence of polymorphonuclears. An intravenous injection of killed typhoid bacilli was followed by a rise in temperature to 104.9 F. and a drop in the white cells to 800. Four days later, patient died, in spite of pentnucleotide, injections of liver extract, and transfusion.

A man of twenty-two had been treated intermittently with moderate doses of sulfanilamide for gonorrheal urethritis, in spite of obvious sensitivity. After a total of thirty-eight grams of the drug, he came under the observation of Berg and Holtzman⁵

prostrated and with a temperature of 104 F. The next morning, "blood examination revealed a marked leukopenia with practically no polymorphonuclears." Liver extract and pentnucleotide failed to prevent death on third day of hospitalization.

Allen and Short¹ record the case of a girl of eighteen, who, because of a vulvar abscess, received sulfanilamide in small dosage over several short periods. Sensitivity to the drug seemed to develop; at first well tolerated, its final employment caused marked symptoms of a disagreeable nature, a rise of temperature to 103 F., and a drop in the white cell count from 17500 to 2900. Apparently, no specific therapy was employed, but the patient gradually improved and four months later blood examination revealed normal conditions.

McGinty³⁵ briefly reports the history of a patient observed by Hoffman. A negro girl, nineteen years old, was given a total of 49.2 grams of sulfanilamide between July 9 and 27, 1937. Four days later, she was admitted to hospital with white cell count of 1350 and absence of granulocytes. She was given three transfusions and granulocytes were observed in the stained smear on August 5. Complete recovery took place.

In addition to these twelve cases, the occurrence of agranulocytosis after administration of one of the drugs in this class has been recorded in one French⁵¹ and in two Dutch^{20, 45} reports. It has been impossible to secure the journals containing these papers.

Weinberg, Mellon, and Shinn,⁵⁴ using sulfanilamide in the treatment of streptococcic meningitis, noted the occurrence of a "moderate progressive decrease of the red cells and hemoglobin", with "a few nucleated red blood cells, polychromasia, and moderate anisocytosis," in one of their patients. Recovery took place rapidly on discontinuance of the drug and the authors were inclined to consider such a reaction as very unusual. The following month, however, Harvey and Janeway²³ reported three cases of frank hemolytic anemia apparently due to sulfanilamide medication, all of whom recovered on receiving transfusions. Three other cases are mentioned by Harvey and Janeway, but no details are given.

In the month succeeding the appearance of the report by Harvey and Janeway, McQuarrie³⁷ and Carey¹² both record anemia occurring in patients receiving sulfanilamide. McQuarrie's patient, a child of twenty-three months' age, ill with bronchopneu-

monia, pericarditis, endocarditis, and septicemia, developed hemolytic anemia quite promptly after institution of sulfanilamide therapy and, in spite of transfusions, succumbed. Evidently, the anemia seen in Carey's patient was of a much less severe nature; the author considered it "possibly" hemolytic, but recovery took place without, apparently, any heroic treatment.

A female infant, one year old, was treated by Kohn²⁸ with sulfanilamide for bilateral streptococcic otitis media. Probably on account of her septic condition, the child was given a transfusion, her father, after careful typing of the bloods, serving as donor; her red cells at this time numbered 4,700,000 and hemoglobin 12 grams. Following administration of 60 grains of sulfanilamide, in a daily dosage of 15 grains, it was found that the red cells had dropped to 3,250,000 and the hemoglobin to 8.5 grams. Although no reaction had followed the transfusion, the bloods were again carefully typed and found fully compatible. Although sulfanilamide was discontinued, the red cells had dropped to 2,000,000 and hemoglobin to 6 grams. Following a second transfusion rapid improvement occurred.

Three cases of anemia in sulfanilamide-treated patients were reported by Jennings and Southwell-Sander.²⁶ Only one of these seemed severe—a man, forty-five years of age, who was treated for meningococcal meningitis with sulfanilamide. His initial red cell count was only 3,050,000 and hemoglobin 65 per cent; under sulfanilamide treatment, these declined to 1,700,000 and 36 per cent respectively. Prompt recovery followed transfusion.

Wood⁵⁵ reports the case of a twenty-eight-year-old negro man, who was treated with a total of 44.66 grams sulfanilamide over a period of six days for streptococcal pneumonia. Marked hemolytic anemia was present on the seventh day and, in spite of two transfusions, delayed until the twelfth and sixteenth days because of difficulty in obtaining a donor, death took place on the sixteenth day.

Long and Bliss³⁰ state that they have observed seven cases of hemolytic anemia, but give no histories. It is possible that in this number are included the cases previously reported by Harvey and Janeway.²³

Obviously, the occurrence of agranulocytosis or hemolytic anemia in seriously ill patients who have been subjected to treatment with sulfanilamide does not definitely establish the etiological role of the

drug. Even if it is granted that sulfanilamide was responsible for all these instances of blood dyscrasias, it must be recognized that they constitute an exceedingly small proportion of the patients who have been treated with sulfanilamide. From the routine examinations reported by Bigler, Clifton, and Werner⁷ and by Campbell,¹¹ an effect on the bone marrow seems to be exerted by sulfanilamide; possibly an initial stimulation followed by depression. It is interesting to note that Osgood and Brownlee⁴² observed no deleterious action of sulfanilamide when added to cultures of human bone marrow in concentrations of 1 to 1000 or less, but they state that the number of marrows examined was insufficient to justify final conclusion. It should be borne in mind, also, that in the intact body sulfanilamide may yield traces of a substance or substances, which, carried to the marrow, may injure the constituent cells.

Although agranulocytosis or hemolytic anemia develop only in rare instances among patients receiving sulfanilamide treatment, their occurrence has been of sufficient frequency to render it most desirable that every patient taking the drug should be under constant supervision and that white and red cell counts should be made on frequent occasions, preferably every day.

Some depression of hepatic function has been noted by Harvey and Janeway²³ in patients treated with sulfanilamide. Hageman and Blake²¹ and Saphirstein⁴⁷ noted the occurrence of hepatitis; the patient observed by the first two authors was an alcoholic female of 53, while Saphirstein's was a young man of twenty-nine years' age.

Indications of a toxic action on the nervous system of animals given large doses of sulfanilamide have been mentioned by a number of workers. From post-mortem examination of animals having received large toxic doses of sulfanilamide, Hawking²⁴ concludes that "the stress falls mainly on the central nervous system." From the clinical side, Colebrook and Purdie¹³ report two instances of "mental disturbances of hysterical type", but question whether sulfanilamide was responsible. In a neurotic man of twenty-one, Hogan saw a definite paranoid condition develop following administration of sulfanilamide in treatment of gonorrheal urethritis and prostatic.²⁵

From these reports of untoward results following administration of sulfanilamide, it is difficult to avoid the conclusion that the drug is potentially dangerous. While it is probable that the great majority of individuals, especially those with healthy liver and kidneys, can be given large doses over considerable periods of time without any serious damage, it seems established that this is not invariably the case. Physicians who employ sulfanilamide should do so with the knowledge that disaster may occur unless careful supervision is exercised, and this should include frequent white and red cell counts, preferably every day. It is unnecessary to add that the employment of sulfanilamide by other than duly qualified physicians is a most dangerous practice, and that it is most desirable that its sale should be permitted only on prescription.

The bibliography, omitted because of lack of space, will appear in reprints of this article.

418 East Main Street.

THE DIAGNOSIS AND TREATMENT OF ACUTE HEAD INJURIES.*

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INTRODUCTION

In this era of rapid transportation and industrial hazards it behooves everyone, whatever his primary medical interests may be, to have a working, practical knowledge of the diagnosis and management of head injuries. Statistics annually show an increase

in mortality and morbidity from head injuries which is appalling and although we may influence only indirectly the causes of the increasing incidence of head injury we can all take a very active role in the proper management of these cases. The purpose of this presentation is to propose rational, practicable methods by which injuries of the head, especially the acute types, may be properly recognized, diagnosed and treated.

The simplest form of head injury is *cerebral con-*

*Amplification of paper read before the South Piedmont Medical Society, Lynchburg, Virginia, November 16, 1937.

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cussion. This implies a period of unconsciousness ranging from a few seconds to a few minutes. The brain has been subjected to a force resulting in an actual shaking up of that structure, a "*commotio cerebri*", to use the older writers' term. Possibly petechial hemorrhages occur. There is usually little vomiting and rarely is there bleeding from the cranial orifices. The great majority of these patients proceed to an uninterrupted recovery. Concussion may or may not be accompanied by fracture of the skull. If there be no fracture present, we usually allow these patients to leave the hospital after several days' stay with the request for a follow-up examination at the end of one week. If a linear fracture be demonstrated, either beneath a scalp laceration or by roentgen ray examination, we advise bed rest for a period ranging from ten days to two weeks or longer, depending upon the symptomatology present. *Cerebral contusion* implies more severe damage to the brain, usually associated with a greater or lesser degree of subarachnoid hemorrhage. If important functional areas of the brain are affected, hemianopsia, hemiplegia, astereognosis, and other neurologic disorders may be demonstrable. If the frontal lobes are definitely contused, the patient may be restless, combative, and even quite uncontrollable, unless strong sedatives, such as paraldehyde, are given by rectum. Lumbar punctures in such cases will usually show an elevated spinal fluid pressure and blood in the spinal fluid of greater or lesser degree.

Considering the necessity for hospitalization of patients with head injury, the following is the rule by which admitting officers and internes govern themselves at the University of Virginia Hospital: Any patient with a definite history of unconsciousness, however slight, is strongly advised to enter the hospital for twenty-four hours; in fact, if the patient refuses, a release must be signed, as the hospital cannot assume responsibility for the complications which might ensue. In addition, all patients admitted undergo roentgen examination of the skull, not necessarily at the time of admission but sometime before leaving the hospital. This is necessary to determine the proper management of the case, the length of time that bed rest should be ordered, as well as for medico-legal purposes; hence it should be done as soon as practicable. We find that the best single method for the prevention of disabling headache, vertigo, etc., which occurs all too commonly after

head injuries, is bed rest, usually up to two weeks, especially when fracture is demonstrable, although it is true that some of the more severe brain injuries have no demonstrable skull fracture. The presence of a linear fracture in the temporal bone, in an unconscious patient with a slow pulse and with a dilated pupil and soft tissue swelling on the side of the fracture, is strong supportive evidence of the presence of an extradural (middle meningeal) hemorrhage, requiring immediate operation. Not all linear fractures of the temporal bone are accompanied by an extradural hemorrhage, but an extradural hemorrhage rarely, if ever, occurs without a linear fracture of the temporal bone, demonstrable by X-ray examination and at operation.

The infrequent occurrence of shock as a result of head injury *per se* should be emphasized. If one take a systolic reading of 100 mm. Hg. as a fairly accurate criterion of the dividing line between shock and non-shock, in adults, one will find that only a small minority of patients fall into the shock group, i.e., blood pressure below 100 mm. Hg. systolic; unless (1) there has been an overwhelming brain injury with a severe basal fracture associated with profound unconsciousness, blood pouring from the cranial orifices, widely dilated and fixed pupils, possibly a massive intraventricular hemorrhage, etc., (2) great blood loss from scalp lacerations or elsewhere, or (3) severe associated injuries. It cannot be emphasized too strongly that head injury *per se* is only infrequently associated with delayed or secondary shock. Very often when shock is definitely present, it will be found that it is due not to the head injury but to a severe crushing chest injury, a compound fracture of the femur, a spinal or pelvic fracture or other "associated injury". It is believed that not more than 10 per cent of all head injuries are associated with delayed or secondary shock and the majority of cases of uncomplicated head injury in shock on admission can be relieved by a simple intravenous infusion of 1000 cc. of normal saline solution in a few minutes.

This point cannot be too strongly emphasized, for it has real practical as well as academic value, i.e., the most important single factor in the management of acute head injuries is the *prevention of infection* and this desideratum depends chiefly on the *early* debridement and primary suture of all lacerations of the scalp (Fig. 1). If the physician believes that the patient is in shock he is very apt to wait one or

two days or even longer before carrying out these procedures with a high percentage of scalp infections, osteomyelitis, extradural and subdural abscesses, meningitis, and brain abscess, not to mention the prolonged morbidity and the postponement of discharge of the patient with the resultant withholding of hospital beds from other patients in this day of crowded hospitals. It is quite possible to have a brain abscess from an infected scalp laceration without skull fracture, the infection passing inward through the bone, the dura and the subarachnoid space to the brain itself. The prevention of infection, accomplished mainly by the early debridement and primary suture of lacerations within four to six hours after the accident has occurred, cannot be too strongly emphasized as the most important surgical factor in

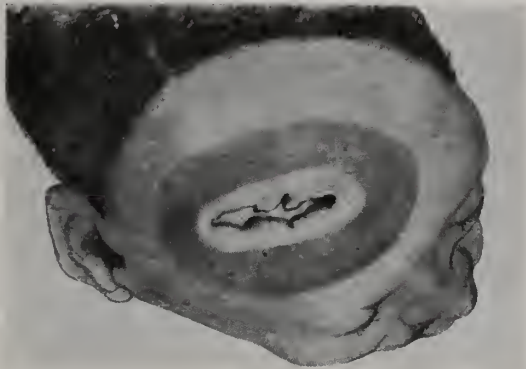


Fig. 1.—The laceration is circumscribed with iodine and alcohol; novocaine is then injected and the laceration debrided and sutured. (From "Operative Surgery," ed. IV. Vol. 2, 1937, by J. S. Horsley and I. A. Bigger, C. V. Mosby Co., St. Louis. By permission.)

the successful treatment of head injuries in general. In addition, if scalp lacerations are not properly treated at the time of the injury, and do not heal *per primam*, the risk of operation, if necessary, a few days or more after the injury, for a possible extradural or subdural hemorrhage or a depressed skull fracture, is always aggravated by the already existing infection, which may well, in such a case, be carried into the meninges and the brain itself, in spite of the most meticulous operative technique.

Statistical surveys of series of head injury cases are not often of great value, a statement also emphasized by Lehman and Parker,¹ for one observer may be speaking of all types of head injuries, another of fracture of the skull only, still another of compound fracture of the skull, and hence mortality statistics in such widely divergent groups of cases are of little or no comparative value. However, in a

carefully controlled series of cases of acute head injury observed over a twelve months' period by us, a total of 388 cases were included, ranging from simple concussion to the more severe grades of head trauma. Of this number, 33 per cent had a fracture of the skull, i.e., about one-third of the total number of cases. This includes all types of fracture from the simple linear type to fractures of the base of the skull—compound, comminuted, depressed fracture, etc. Of the total number of cases with or without fracture, only 7 per cent were in shock. Also, of this total number of cases, 33 1/3 per cent were complicated by some type of major associated injury calling for close cooperation with other departments: orthopedic, general surgical, genito-urinary, ophthalmologic, etc.

The total mortality for this series of 388 cases of all types of head injury, ranging from simple concussion to the more severe types, was 7 5/10 per cent. It is generally held by most observers that the mortality for head injuries in general should be 10 per cent or less. However, the total mortality in 126 cases that had a skull fracture was 13.5 per cent, the majority of these cases also having associated injuries so that the assigning of the cause of death to the head injury alone is difficult if not impossible because it was found that the mortality in all types of fracture of the skull without associated injuries was only 5.6 per cent.

In a similar series of cases analyzed by Dr. C. C. Coleman,² Director of the Clinics of Neuro-Surgery at the University of Virginia and at the Medical College of Virginia, a mortality of 8 per cent for all types of head injury was found.

The present-day management of head injuries in general tends toward simplification. Less than 10 per cent (9.3%) of all head injuries in the clinics mentioned above were subjected to cranial operations of any type (apart from debriding and suturing of scalp lacerations on admission). Lumbar puncture is to be condemned as a routine procedure in head injury. It was utilized by us in 15 per cent of all head injury cases, thus differing from Dandy,³ of Johns Hopkins University, who considers it of little or no use in any case. We consider it especially dangerous in suspected extradural hemorrhages, as the withdrawal of fluid from below might tend to aggravate the bleeding intracranially due to the lessened intracranial pressure which results from the lumbar puncture. It has been shown by Sprong⁴ that an

almost infinitesimal amount of blood is obtained by the draining off of one to two ounces of bloody spinal fluid in a case of head trauma compared with the entire amount of blood present in the cerebrospinal fluid calculated on the total amount of cerebrospinal fluid present in the average individual, so that the efficacy of this procedure for the removal of blood is doubtful, although, in certain cases, it certainly is helpful in relieving headaches, stupor, and other disabling symptoms.

We do not advocate dehydration, as recommended by Fay⁵ of Temple University, a method of treatment which appears undesirable in the main, especially at the time of the injury. We have had a number of such patients admitted after such therapy with high fever, stupor, etc., who were relieved by an adequate administration of fluids (2000 cc. daily). We maintain a fluid intake of 1500-2000 cc. daily; if this amount cannot be taken by mouth, it is supplemented by hypoclysis, intravenous infusions, or by nasal tube feedings. We invariably elevate the head of the bed, with two exceptions (1) if the patient is in shock; (2) if there is excessive mucus in the tracheo-bronchial tree in an unconscious patient, in which latter case the foot of the bed should be elevated, the patient turned on one side or the other and the mucus aspirated with a suction apparatus and atropine administered. This sometimes results in dramatic return to consciousness and rapid recovery of the patient, as demonstrated by Coleman.⁶ The head down position should not be maintained more than one to one and one-half hours at any one time because of the undoubted tendency to increased intracranial pressure and possibly added intracranial hemorrhage as a result of lessened venous return from the brain while the head is lowered.

The day of frequent subtemporal decompression is definitely past in the management of acute head injury. In a recent series of ours (194 cases) analyzed from the operative standpoint, it was found that the procedure was utilized but once. It is a homely but very true statement that "one can accomplish little in operating on a case of acute head injury unless one can take something out", (Coleman) i.e., extra or subdural hemorrhage or depressed bone fragments or contused and lacerated cortical and subcortical brain tissue. The mere removal of bone as in a subtemporal decompression accomplishes little and it is surprising,

if such a case come to autopsy later, to see how little of the cranium is removed by the procedure, compared with the cranium as a whole. We reserve the procedure for patients who remain stuporous and drowsy for days, possibly with a somewhat slow pulse rate, and who maintain a consistently high spinal fluid pressure (we usually accept 150 mm. of water as a top normal reading) and, if conscious, have severe headache. Subtemporal decompression is then especially indicated if no relief is obtained by intravenous 50 per cent sucrose (100 cc.) twice a day or (and) three to four ounces of 50 per cent magnesium sulphate by rectum daily. The use of sucrose is rational as a means of lowering intracranial pressure as there is no secondary rise to or above the original cerebrospinal fluid pressure reading such as frequently occurs with glucose, the use of which has been abandoned by practically all neurosurgical clinics as a measure to reduce intracranial pressure in cases of acute head injury. The operative procedures used, in addition to the infrequent subtemporal decompression, are elevation and repair of a depressed skull fracture (simple or compound), removal of extra and subdural clots and diagnostic burr openings in each superior temporal region to rule out such clots. This last procedure is simple, probably does little if any harm in itself, and may be life-saving in uncovering an unsuspected clot in a case, which, otherwise, might have been treated as one of cerebral contusion and laceration with no surgical intervention. It is strongly believed that all compound depressed fractures should be operated on within eight to twelve hours after the injury, *if not earlier*. We cannot subscribe to the doctrine of Munro⁷ who stated, in a recent paper, that he always waits, in cases of compound depressed skull fracture (whether in shock or not), at least twenty-four hours, if not longer, to see how the patient reacts, and to combat shock. It is reiterated that the patient is infrequently in shock unless there is an overwhelming brain injury or a severe associated injury, and if the patient is in shock on admission he can almost always be relieved of shock in four to six hours by an intravenous infusion and blood transfusions, if necessary, unless he is so severely injured that death supervenes by that time, in which case operation would probably have been of no avail except in the occasional case of extradural hemorrhage, in which

instance death will occur rapidly, especially if the hemorrhage is low in the middle fossa compressing the mid-brain and brain stem. However, the favorable case of extradural hemorrhage usually is not in shock on admission; indeed, the blood pressure tends to be moderately or even greatly elevated in the early stages.

Everyone is familiar with the syndrome of extradural hemorrhage with an initial period of unconsciousness, possibly but not always a lucid interval varying from a few minutes to an hour or more, followed by profound unconsciousness, a typical loud, stertorous respiration, slow pulse and respiratory rates, a dilated pupil on the side of the clot, contusion and swelling of the scalp in the affected temporal area, together with a linear fracture of the temporal bone on the side of the clot (almost always demonstrable by X-ray examination), and contra-lateral paralysis or Jacksonian seizures of the face, arm and leg together with increased tendon reflexes on that side and, usually, pyramidal tract signs on the contra-lateral side as well. However, there is also a *delayed* extradural hemorrhage not manifesting itself for days or weeks after the injury, as mentioned by Horrax⁸, at which time severe headache, visual failure from choked discs or stupor supervene and the clot is evacuated. The explanation of why certain large extradural clots do not cause death earlier is probably due to the fact that such lesions are, without exception, located *high* over the cerebrum from a tear in an anterior or posterior branch of the middle meningeal artery, and hence produce little or no pressure on the more vitally important mid-brain or brain stem

as do the more inferiorly situated *acute* clots (Fig. II). We have seen three such late cases in the last few months; two recovered and one died post-operatively. The acute subdural clot is more insidious than is the extradural variety; there is usually no lucid interval, and the outcome is not always successful as the subdural blood found over the cerebral cortex may be only an indication of severe hemorrhage at the base of the brain from rupture of branches of the circle of Willis, or large cortical-basilar veins, and hence frequently uncontrollable. A very interesting lesion, although rare, is the intracerebral clot which is sometimes successfully evacuated by exploratory puncture of the hemisphere with a ventricular needle.

The chronic subdural hematoma is not considered in detail here as it is not germane to this discussion; suffice it to say that it is probably always post-traumatic, although usually following relatively trivial or even unrecalled trauma which occurred weeks or months before, and hence many of these patients are admitted as brain tumor suspects, the lesion being disclosed unexpectedly at operation in the absence of any traumatic history. Alcohol often is a factor in that patients of this type may receive considerable trauma, which passed unnoticed, in the course of a debauch. One such patient who has been seen within the past year denied trauma, but the patient's wife volunteered, after operative disclosure of a large chronic subdural hematoma, that, when intoxicated, the patient was accustomed to beat his head violently against the wall, causing trauma amply sufficient to produce a subdural hemorrhage. When patients with chronic subdural hematoma die post-operatively death is due, not to increased intracranial pressure but, on the contrary, to cerebral hypotension, incident to the extreme condensation of the brain brought about by the long-standing clot. It can almost be predicted at operation whether recovery will occur; if the brain has not begun to expand at the time of closure, convalescence will be very stormy or a fatal terminus will supervene.

A few general statements might be made at this juncture. The administration of morphine or other opiates to any patient who has been rendered unconscious, even momentarily, is fraught with potential disaster and is to be scrupulously avoided, because, and this point is to be emphasised, the most important single factor in the evaluating of an individual case

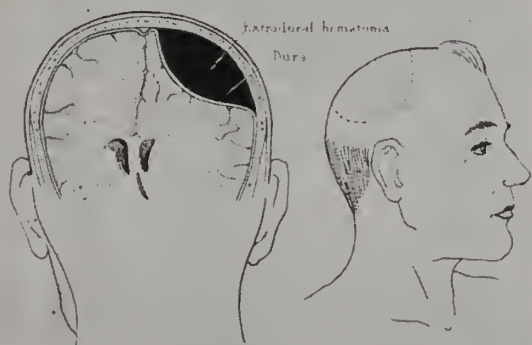


Fig. II.—Showing location of a “high” extradural clot which may not produce pressure symptoms for days or weeks. Note that the base of the brain is relatively spared from compression. (From “Operative Surgery,” ed. IV, Vol. 2, 1937, by J. S. Horsley and I. A. Bigger, C. V. Mosby Co., St. Louis. By permission.)

of head injury is *the state of consciousness*. The patient may have fluctuations in blood pressure, the pulse may be unduly slow and the respiration even Cheyne-Stokes in type but, if the patient is fairly conscious and rational, one need scarcely fear that an acute extradural or subdural clot or other surgical emergency is being overlooked; also, one should be on the alert not to be led into the supposition that a patient is unconscious and hence a subject for op-

intervention. If the all-important state of consciousness is masked by opiates or other powerful sedatives, one is at a loss in evaluating the clinical picture.

Patients with large cranial defects following operation for depressed fracture in the frontal areas and over the vault of the skull are advised to have the area repaired with a celluloid plate six months or more after the operation, at which time practically all danger of infection is past. This is done not only for the cosmetic effect but also as a protective measure (Fig. III).

Children, generally speaking, recover from head injuries more rapidly and completely than do adults. Occasionally curious reactions occur in children, such as generalized convulsions, profound stupor, prolonged vomiting, etc., brought about by a degree of trauma which, in an adult, would produce a simple concussion with unconsciousness for a few minutes. Occasionally, in our clinic, these children are subjected to diagnostic burr openings in the skull to rule out an intracranial clot, with negative results, after which they proceed to an uninterrupted convalescence. The explanation of these unusual reactions is obscure except that, in regard to convulsions, it is a well-known fact that children are more liable to them than are adults, as any abnormal stimulus may instigate convulsions in a child who already has an unstable nervous system. *Tetany* should always be thought of in a child who continues to have convulsions, even unilateral ones, following head injury, and should be promptly investigated by blood calcium and phosphorus studies and, what is even more important, by the electrical reactions of Erb, as employed by Royster⁹ of the University of Virginia, who has found that, although the *blood* calcium may be within normal limits, the electrical reactions may strongly suggest, if not conclusively prove, tetany. This finding is explained by him as due to the fact that the patient may have a normal calcium content of the blood serum and yet have a low *tissue* calcium, predisposing the patient to tetanic manifestations, including convulsions.

Examination of the fundi in cases of acute head injury is of little value in detecting increased intracranial pressure within the first few days, although it should not be overlooked as a differential diagnostic procedure to rule out apoplexy, in which case the retinal arteries are usually sclerosed, or uremic



Fig. III.—Top figure shows cranial defect following repair of depressed skull fracture. Lower figure demonstrates restoration of contour of cranium by celluloid plate repair. At least six months are allowed to elapse from the time of the injury before such repair is carried out. (From "Operative Surgery," ed. IV, Vol. 2, 1937, by J. S. Horsley and J. A. Bigger, C. V. Mosby Co., St. Louis. By permission.)

eration, possibly, when he is actually aphasic and speechless, but conscious, lying quietly, with eyes closed. An increasing stupor, together with signs of increased intracranial pressure, chiefly slowing of the pulse and respiration and the advent of localizing signs in the extremities and pupils calls for operative

coma, in which case a marked neuro-retinitis with hemorrhages and exudates will usually be seen.

Fracture of the base of the skull is usually not demonstrable by X-ray examination unless there is an extension into or from the vault. The diagnosis is made clinically, by the fact that cerebrospinal fluid escapes from the cranial orifices, a Bell's palsy or other cranial nerve palsy may supervene (if the middle or anterior fossae are involved), and Battle's sign (late discoloration over the mastoid process) or late discoloration about the eyes (indicative of anterior fossa fracture) is present. The X-ray examination may reveal an intracranial aerocele, always indicative of fracture of the base of the skull usually in the ethmoid region of the anterior fossa, a condition which, especially if associated with cerebrospinal rhinorrhea, may require operative intervention and repair of the communication with fascia and dura (Fig. IV and Fig. V). Intracranial aeroceles are usually associated with cerebrospinal rhinorrhea at one time or another, incident to the fracture of the anterior fossa, and rarely complicate the more frequent cerebrospinal otorrhea, incident to

ministered. Drainage of cerebrospinal fluid from the ear or nose should not be treated actively, as far as local treatment is concerned, but the ear, especially, should be kept clean with a sterile pad overlying the affected orifice and the head of the bed elevated. The external auditory canal only should be gently cleaned with alcohol. No sprays or irrigations should be used and the patient is advised not to cough, sneeze, or strain if at all pre-

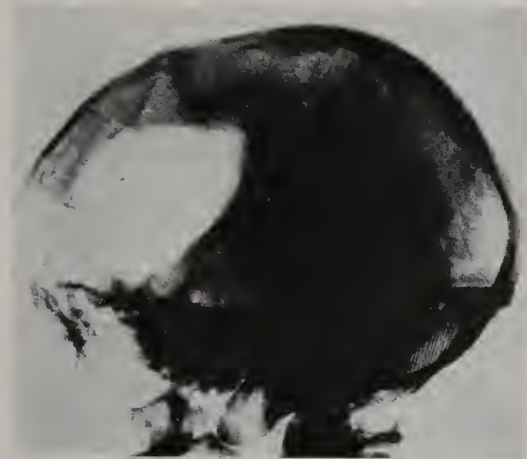


Fig. IV.—Intracranial aerocele following a compound depressed fracture of the skull involving the cribriform plate of the ethmoid bone. Cerebrospinal rhinorrhea was present. (From "Operative Surgery," ed. IV, Vol. 2, 1937, by J. S. Horsley and I. A. Bigger, C. V. Mosby Co., St. Louis. By permission.)

fracture of the middle fossa. *Meningitis* always is a possibility when cerebrospinal fluid drains from the cranial orifices, and a cerebro-spinal fluid leak probably should call for the immediate use of sulfanilamide (gr. xx, t.i.d.) as a prophylactic measure when it is first detected, although some will object to this on the ground that the organisms will not have been verified at the time the drug was first ad-



Fig. V.—Disappearance of aerocele (Fig. IV) after repair of communicating fistula in ethmoid region with a fascial implant. Defect seen anteriorly is due to bone removed at operation (later repaired with a celluloid plate). (From "Operative Surgery," ed. IV, Vol. 2, 1937, by J. S. Horsley and I. A. Bigger, C. V. Mosby Co., St. Louis. By permission.)

ventable. The ear involved should be kept uppermost, as advocated by Coleman.¹⁰

Alcoholic intoxication is frequently recorded as such in the hospital record when alcohol is detected on the patient's breath, a very crude test indeed for intoxication and meaning nothing as to the importance of alcohol in causing the patient's condition. Until adequate laboratory measures are available, and this is an important point, for the accurate detection of amounts of alcohol in terms of mgm. per cent of alcohol in the blood serum, as advocated by Selesnick,¹¹ and comparison of that figure with known clinical findings, such as incoordination, ataxia, impaired reaction time, etc., is made, the less said about alcohol as a cause of the symptoms in any individual case of head injury, the better. In England, thousands of cases of intoxication were studied by all clinical tests, each case compared with the alcoholic content in the blood serum and accurate deductions obtained so that it was definitely possible to state that if the reading in mgm. per cent of alcohol

in the blood serum reached or excelled a certain figure, the patient was undoubtedly intoxicated, regardless of any other condition he might have.¹¹ The Federal Bureau of Investigation in Washington and the National Safety Council¹¹ also utilize the information obtained from studies of the blood which is absolutely necessary in determining, for the purpose of record, whether the patient is intoxicated or not, 150 mgm. per cent of blood alcohol being accepted, for the present, as the figure above which alcoholic intoxication is definite. This method should be adopted in cities and communities in which a central laboratory with twenty-four hour service can estimate the alcoholic content of blood samples from the various hospitals of the city or community, whenever submitted. Until such a system is adopted, it is better to treat the patient with disregard for any alcoholic intake, for, otherwise, one might well think a deep stupor to be due to alcohol, whereas it might possibly be that developing coincidental with a post-traumatic surgical lesion.

SUMMARY

An effort has been made to present the subject of acute head trauma in a rational and practicable manner. There will always be differences of opinion on certain phases of this all-important subject, which probably accounts for the fact that it is certainly one of the most frequent subjects discussed in medical journals, the medical press and in medical assemblies.

After the experience of several years' trial with the various methods promulgated, the procedures of observation, diagnosis and treatment outlined in this paper are believed to be both practicable and efficient in the management of acute head injuries. The mortality rates of seven and five-tenths and of 8 per cent in two separate series of cases in clinics in which these methods are utilized, would seem to bear out the value of the procedures used, for certainly a mortality of 10 per cent or less in any large group of all types of head injuries compares quite favorably with similar analyses from other clinics, although every effort is constantly being made to improve the results.

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EPIDIDYMITIS.*

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Epididymitis is the most common of all diseases of the testicle. The chief causes of epididymitis are infections and trauma. Primary tumors are quite rare but these when discovered are usually extensions from the testicle. New growths occur usually during early adult life and more often when there is a congenital anomaly of the testis, cryptorchism.

A brief review of the anatomy and embryology of the epididymis may aid in our presentation. The

epididymis is a somewhat crescentic structure about 5 cm. long. It consists of a head, body and tail. The head, or globus major, is composed of ten to fifteen canals, the vasa efferentia, which empty into the single canal of the body of the epididymis, a tube ten to twenty feet in length when dissected out, but coiled up in the short space of the body and tail of the organ. At the tail, however, this convoluted tube straightens out and becomes the canal of the vas deferens. The entire epididymis is closely invested by the tunica albuginea and attached to the

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testicle at both ends, while the body is separated from the testis by an involution of this serous covering forming an intervening pocket, the sinus epididymis. The canal and the vasa efferentia are lined by ciliated epithelium and the cilia maintain a constant movement towards the vas. The canal has a muscular coat which is composed of three distinct layers, an inner, transverse and an outer longitudinal. The blood supply is from the spermatic artery, and the artery of the vas. The veins issue from the posterior border of the testis and form the pampiniform plexus. They empty on the right side through the spermatic vein into the vena cava, and on the left side into the renal vein. The globus major, paradidymis and the vasa aberrantia are developments of the Wolffian body, while the globus minor body, vasa deferentia, seminal vesicles and ejaculatory ducts are developed from the Wolffian ducts.

A number of small embryologic remains are found in connection with the epididymis, viz: the pedunculated and sessile hydatids of Morgagni, the organ of Giralde, and vas aberrans. These analagous at times give rise to cystic and other pathological conditions and unless their relationship be kept in mind while making examinations errors in diagnosis, particularly of the chronic indurative forms of epididymitis, or neoplasms, may be made. The infectious form of epididymitis far exceeds the number of other varieties that come under the observation of urologists. It is well here to mention an acute form of epididymitis which is traumatic in origin and is due to an external injury (blows, kicks, horse-back riding, motorcycling, excessive venery, etc.). This condition is extremely painful, often accompanied by nausea, vomiting, shock and extravasation of blood and swelling.

The infectious type of epididymitis is the most common kind observed and the gonococcus is the offending organism in 95 per cent of the cases. The early diagnosis of the disease is important for upon it depends the treatment to be employed, the control of the infection, the shortening of the period of disability. Infection of the epididymis is by extension of a gonococcal inflammation from the posterior urethra to the prostate, seminal vesicles and vas. Besides the gonococcus, other pyogenic infections of the epididymis are often caused by unclean and rough instrumentation of the normal urethra. The

frequent use of a dirty catheter in cases of enlarged prostate is responsible for many inflammatory extensions. Traumatism of an already infected urethra with sterile instruments is often observed, especially in poorly treated patients with gonorrhea. Epididymitis often results from too vigorous massage of the prostate. Many observers in this country report from ten to 25 per cent of their patients develop epididymitis. In our study we found 8 per cent of our cases had this adnexal extension. This figure includes all admissions during the period and of this group nearly half were admitted with a posterior infection. We admit at times a patient with an acute epididymitis and save for the history we are unable to make a trustworthy diagnosis as to the cause. This kind of an epididymal infection may conceivably be metastatic in origin.

Gonorrheal epididymitis is an acute inflammation confined to the epididymis and vas and in nearly every instance affecting primarily the lower pole or tail. The first suggestion of this complication which the physician may observe is the change in the second glass of urine. The second urine may be clear and become cloudy in a few hours. However, in five cases in this group the second urine remained clear throughout the infection. The patient usually has an increase in urinary frequency both day and night and pubic distress and at times terminal hematuria. The patient may complain of discomfort in the groin or in the epididymis itself or the condition may be precipitate and the patient seized with an aching neuralgic pain along the groin which extends down towards the testicle and is greatly increased by walking or standing. Upon examination the vas deferens is usually found to be enlarged and very tender to pressure. Rectal examination may often disclose a thickened tender mass corresponding in position with the seminal vesicles. The condition may develop without any manifestation of cord involvement. Once the epididymis becomes involved, however, it increases rapidly in size and the scrotal covering of the affected side often becomes edematous and inflamed. The pain becomes dragging in character, peculiarly sickening in quality, which at times is almost unbearable and is definitely fixed in the epididymis. The urethral discharge is usually diminished, even ceasing entirely for a time, but returns upon control of the extension. This phenomenon is thought to be due to accompanying

high fever, and the localization and intensification of the infection and mobilization of the defense mechanism at a point which is poorly drained. Palpation reveals the epididymis to be exquisitely tender, hard and swollen, in many cases enveloping the testicle above, behind and below, but most marked at the tail. Accompanying these extensions are fever, pain, nausea and vomiting at times, and often mental and physical depression. When the tunica vaginalis becomes involved, which it frequently does, this results in acute hydrocele and this mass may confuse the practitioner to such an extent that an incorrect diagnosis of orchitis is sometimes made. In the majority of cases this description constitutes the classic picture of an acute gonorrheal epididymitis. Occasionally acute vesiculitis and epididymitis are attended with symptoms of great severity and may closely resemble an acute abdomen.

The essential points to be considered in making a differential diagnosis depend upon these facts: Gonococcal epididymitis is an acute specific infection which occurs usually within the first three or four weeks of the disease, and is due to an extension of the infection from the urethra to the prostate and vesicles and travels along the vas and is primary in the globus minor. The infection runs an acute course, is to an extent self-limited, but greatly benefited by treatment and terminates usually in complete obstruction of the affected side. In bilateral infections sterility is to be expected. However, in rare cases the repeated examination of the semen over a period of months must be resorted to before a positive diagnosis of absolute sterility is made. It is these characteristics of gonococcal epididymitis which differentiate it from tuberculous or syphilitic epididymitis. Tuberculosis of the epididymis is usually slow in onset, attacks the globus major and often involves the testicle, is practically painless, frequently complicated by hydrocele and runs a protracted course. The infection is usually secondary to pulmonary involvement, or by extension from the urogenital tract. The tuberculous mass lies close against the testicle, clinging to it like a clam shell. The vasa are often involved. The process is invasive but slow and the dartos integument of the scrotum often breaks down, leaving a discharging sinus.

In syphilitic epididymitis the process nearly always affects the testicle first and then spreads to the epididymis. It is chronic, painless and the enlarge-

ment of the epididymis may be nodular. In these patients there is often a history of an ulcer, treatment for the disease, physical evidence of lues or a positive blood Wassermann test.

In our review of 8,000 case records of five years, 1925 to 1930, of acute and chronic gonococcal urethritis in which the patients were treated with irrigations of potassium permanganate we discovered 627, or 8 per cent, developed an epididymitis. Of this number fifty, or 8 per cent, were bilateral. The complication was found oftenest in those patients who disobeyed instructions, or had suffered an extension at an earlier infection, or did hard manual labor or blended alcoholic beverages with sexual excesses. We have frequently observed complications and predicted a stormy recovery in those patients whose sexual contacts have suffered a pelvic extension. This is especially noticeable if repeated exposures have been made to the same source.

The occupations followed by this group comprised laborers, chauffeurs, salesmen, clerks, street car conductors, newspaper boys, bellboys, waiters, etc., work which necessitated long hours of walking, standing, riding or sitting. There is no question in our minds that occupation plays an important role in the extension of gonococcal infections. We have observed over a period of years the seasonal increase in the number of patients with epididymitis and the largest number is observed during the winter months.

In reviewing this series of cases it was found that they readily fall into two classes, viz.: (1) Those experiencing prodromal symptoms; (2) Those in which the extension was precipitate. The patients in group one complained of aching pains in the groins, tenderness about the inguinal rings and along the vasa, chilly sensations and often there was a slight elevation of temperature. In these patients the swelling of the epididymis was usually insignificant and there was slight systemic disturbance. Both urines were usually hazy days before the onset of the epididymitis but they became cloudy. The urethral discharge usually ceases but returns when the condition begins to improve. The majority of these patients have had one or more attacks of gonorrhea.

The second type of patient in this series had no prodromal symptoms. The onset was sudden. The patient may be seen one day when clinical examination is negative and his record shows no signs of a

posterior involvement, but on the following day there is found a fully developed case of epididymitis. The swelling of the epididymis is marked and the pain is severe and the systemic reaction depressing. The symptoms at times may be so severe as to stimulate those of a localized peritonitis. The temperature may reach 102 degrees in some patients. The edema of the vas with concomitant pressure on its sensitive coverings is the cause of the symptom complex.

The ideal treatment for acute gonococcic epididymitis consists of omission of all local treatment, rest in bed, immobilization of the testicles, local application of heat or cold and a sedative for pain. In addition, intravenous injections of sodium iodide and intramuscular injections of foreign proteids are of value. The foreign proteids stimulate the hematopoietic system and hasten recovery. Some writers praise highly the intravenous and intramuscular injection of calcium preparations. Our results have been disappointing. The great majority of our patients are in the low income group and unable to secure bed rest even for a day or two without jeopardizing their jobs; therefore, our treatment procedures are devised especially for ambulatory patients and they obviously must be both expectant and conservative. Our plan of therapy provides that all local treatments be omitted, a simple and non-irritating diet be taken, a well fitting suspensory, preferably without leg straps, be worn day and night, the application of heat in any form, especially hot Sitz baths and hot rectal irrigations, the intravenous injections of sodium iodide, one gram or two grams every other day for six or more treatments, the intramuscular injections of foreign proteids from three to five cubic centimeters at forty-eight hour intervals for six or more visits, necessary sedatives and such rest periods as the patient may secure at his work and at home. We usually find that after a week or ten days of these procedures the patient is quite comfortable but we withhold any urethral medication until the second urine has been clear for at least ten days. We think that many exacerbations of otherwise controlled adnexal infections are due to the haste in beginning irrigations or injections, prostatic massages or instrumentation. Some urologists advise puncture of the epididymis for the relief of pain and others suggest epididymiotomy, vasotomy and injections of antiseptics to the vesicles

and epididymis in protracted infections. We rarely find a patient in which these procedures are indicated but in stubborn chronic infections good results have been reported following hyperpyrexial treatments.

We do not have trustworthy data as to the actual causes which precipitate an epididymitis in this series of cases but the probable factors are:

| | |
|---|-----|
| Alcohol, sexual excitement or intercourse---- | 70% |
| Occupation which requires long hours of standing, sitting, walking, so forth----- | 15% |
| First infections ----- | 10% |
| Unknown ----- | 5% |

Alcohol and any form of sexual excitement are prone to produce complications in gonococcic urethritis. We think that certain occupations play an important part in the extension of the infection as well as adding to its chronicity. There can be no question that there are selective strains of the gonococcus and in certain individuals no matter how well treated and managed complications will occur. Conversely, there are other patients which despite the roughest kind of treatment do not develop adnexal complications.

First infections are usually vicious, especially in blondes, complications are frequent and in general a stormy recovery is to be expected. There is no question that an attack of gonorrhea conceivably lessens local tissue resistance and succeeding infections may be contracted with greater ease. We have observed that when posterior extensions occur with one infection, subsequent attacks frequently cause identical complications.

SUMMARY

1. A discussion of epididymitis and its causes is presented.
2. The anatomy and physiology of the epididymis are reviewed.
3. The differential diagnosis of epididymitis is discussed.
4. The number of patients developing epididymitis in this survey of 8,000 cases is recorded as 627, or 8 per cent. Of this number fifty, or 8 per cent were bilateral.
5. The treatment measures for gonococcal epididymitis are considered in detail.
6. The probable factors which precipitate epididymitis in gonococcal infections are given in tabular form.

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THE ETIOLOGY OF MALIGNANT TUMORS.*

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Knowledge of the cause of many diseases has led to the great advances in the prevention and treatment of these diseases which have been made in the past fifty years. Tremendous efforts have been made for many years to determine the cause of cancer and many theories have been expounded as results of thought and research on this problem. At intervals have come assurances that the cause has been discovered, but these theories or demonstrations usually have been promptly discredited. It has been recognized only in recent years that there is no one cause of malignant disease, that there is no specific cause for a specific type of growth, and that there may be very different groups of causative factors which result in the same type of cancer. This recognition of the non-specific character of the disease is a real advance in the study of its causation and should eliminate much of the misdirected and unprofitable effort of past years.

There are many factors which have definite effects in the development of new growths—both benign and malignant. Many of these factors have been known for many years; some have been too much emphasized and some have been too little considered. Some of them are of very recent knowledge and the problem of weaving a pattern from this complicated mass of data seems an almost impossible one. The almost unlimited experimentation which has been done has undoubtedly shed light on many phases of the problem, but the limitations of the experimental laboratory are such that it cannot cope with the complex nature of this disease to the point of defining the cause of any malignant growth in the human being. I believe that the solution, if ever found, must come from painstaking, careful and exhaustive clinical observation and by the application of facts so determined as to deduce the causative factors.

Some of these factors are inherent in the individual and are the results of either breeding or faulty development or metabolism. Some of these are beyond the reach of any control; others may be modified or eliminated by treatment. Other factors result from outside influence on the individual and

most of them can be materially modified or eliminated.

INTRINSIC FACTORS

Notable in the first group is the influence of heredity, and this factor is obviously beyond our control. There has been a tendency in recent years to belittle the influence of heredity in the development of cancer. Ewing says, "The importance of heredity must be accepted in a considerable list of less frequent forms of cancer * * * *. One may cheerfully accept all the data secured by Slye and others regarding the influence of heredity in mouse tumors, intensified by selective breeding, and still see that the hereditary tendency is not the disease itself, that the usual exciting factors must be brought into play, and that in hereditarily predisposed subjects the preventable factors may be successfully excluded". And, he adds, "It is important to remember that individuals inherit the family habits and environment of their forbears, and that these factors may explain some of the observations suggesting an influence of heredity". It seems to me that heredity is a definite factor in the development of cancer, but like all the other influences only a part, and not a necessary part, in the combination of the etiological factors which may produce the disease.

The next inherent factor is the presence of misplaced embryonic tissue. Cohnheim's theory attributed all cancer to this cause but it has been so modified and corrected during the passage of years that it is recognized now to play a part in only a limited group of cases. *

Another inherent factor is the influence of the endocrine glands. While the mass of data concerning the influence of these glands on the body economy is a modern chapter, it has been many years since the female was castrated in treating cancer of the breast. This procedure was given up, but is now being revived by radiation-destruction of the ovarian function. That there is some relationship cannot now be questioned but exactly what it is, is still more indefinite than endocrine therapy itself. Experimentally the estrogenic hormones have been used to excite the onset and growth of cancer in animals. The excretion of estrogenic hormones in the urine of in-

*Read before the Richmond Academy of Medicine, January 25, 1938.

dividuals with teratomas of the testicle further suggests an influence. Lewis and Geschickter and others have produced breast cancer in both male and female mice from a susceptible strain by the injection of estrin. On the other hand, chronic cystic mastitis in the human female, considered by some as a precancerous lesion, has been entirely relieved by administration of the same substance.

Solid adenomas of the breast may disappear during lactation, and fibroid tumors of the uterus have been observed to disappear during parturition. The influence of pituitary, parathyroid and adrenal tumors delivering an excess or a perverted extract of the gland or both has been noted not only in changes in body growth but also in the development of tumors. As our knowledge of endocrinology increases we may be able to do more in the control and perhaps in the treatment of tumors.

It seems that the proportion of the degree of civilization of a people is in direct ratio to the rate of cancer among those people. This may be due to inherent changes in the body economy, or it may be that there is increased exposure to extraneous factors.

Susceptibility and immunity may play an important part in the development of cancer or the freedom from it. Certainly there is a marked difference in the progress of the disease of apparently the same grade in different individuals. I saw what were clinically metastases in the liver from cancer of the breast removed forty years ago (this was not proved pathologically). I know of recurrences of the same type of carcinoma twenty-five years after operation and I have seen a number of recurrences ten to fifteen years after operation. These individuals must have had more than the usual resistance to the growth to have harbored it in a quiescent state for so many years.

Benign tumors may be considered an intrinsic factor which, due to the influence of other conditions, may lead to the development of a malignant growth. That a benign growth ever changes into a malignant one is denied vigorously by some pathologists, but there is much evidence to support the contrary view. Numerous examples could be cited, for every practitioner must have observed such changes. The benign pigmented mole innocently growing on the skin for a long time may, from irritation or some unexplained cause, change into a highly malignant melanoma. A large percentage of cancers of the thyroid gland appear to arise in pre-existing ade-

nomas. Sarcoma of the uterus has arisen in fibroid tumors which have innocently been present for many years. Fibro-lipomas, especially those in the retro-peritoneal space, may change into sarcoma. Benign giant cell tumors of the bone occasionally become malignant, and many other examples could be collected.

EXTRANEOUS FACTORS

The extraneous factors are principally irritants of one kind or another, but, before discussing them, brief mention should be made of diet and specific infection.

Much has been said of diet as a possible cause of malignancy, but most of the reasons for this are disposed of easily. It seems possible, however, that there may be some connection with the presence or absence of certain of the vitamins or some abnormal digestive action which would lead to an excess of carcinogenic substances.

Craver says, "One of the most interesting recent developments and perhaps one of epochal importance, is the recognition of the fact that these carcinogenic hydrocarbons are closely related by chemical structures to a series of substances that are of common occurrence in the body and of great importance biologically; namely, bile acids, cholesterol, ergosterol, vitamin D, the testis hormone and particularly the estrus producing and possibly the luteal hormone. This recognition has led naturally to the suggestion by Kennaway and Cook that under some conditions the sterols, normally present in the body, might undergo such a chemical alteration as to become carcinogenic. Moreover, it has been found that some of the carcinogenic derivatives of tar are capable of producing estrus in castrated rats or mice. This leads to a consideration of the influence of the hormones in carcinogenesis * * * *'. This has been referred to above.

Specific infecting organisms and viruses have been frequently reported as being the cause of cancer. These reports have never been adequately substantiated by other workers, though, notably in Europe, some hold to the belief that they play a part in certain tumors. It seems safe, however, to dismiss the specific infecting body from consideration.

IRRITATION OF TISSUE

Irritation of tissue is perhaps the most important factor in the development of cancer. This importance is due both to its frequency and to the fact

that it can so often be controlled. Budd divided irritants into three main groups: chemical, physical, and biologic.

The chemical irritants are responsible for cancer found in certain industries. The first of these was described by Pott who found cancer of the scrotum among the chimney sweeps in England, the constant exposure to soot being the exciting factor in the growth. In the light of the modern use of tar to stimulate the growth of malignant tumors by local application to the skin of laboratory animals, it seems clear that the soot contained hydrocarbons which were carcinogenic. These hydrocarbons, as brought out above, are closely related to biologic and metabolic substances found normally in the human body. Tar derivatives may be the irritant, which results in cancer in internal organs. Cancer of the bladder has been reported in patients who had been treated during long periods of time with tar for skin lesions. It has been suggested that the very marked increase in the incidence of cancer of the lung may be due to inhaling particles of tar ground out of modern roadways or hydrocarbon from combustion of oil and gasoline.

Pipe smoking has long been considered an important factor in the development of cancer of the lip and tongue. It is highly probable that some of the products of burned tobacco which come in frequent contact with the mouth mucous membrane of these pipe smokers contain substances allied to the carcinogenic hydrocarbons of tar. While tar now holds the spotlight in cancer research there are other chemicals which influence the development of cancer. Among the workers in the aniline industry who come in contact with these chemicals there is an incidence of bladder cancer of 4 per cent to 5 per cent, according to Craver, and prolonged use of arsenic is suspected as a serious factor in skin and lung tumors.

The group of physical irritants is large. The most simple physical irritant is trauma. Ewing very positively asserts that no single trauma can initiate a malignant growth and he is doubtful of chronic trauma. It is usually easy to discredit trauma as a factor in cancer of the female breast, but the rough tooth constantly irritating the tongue may well result in malignant growth.

Constant exposure to heat is a factor demonstrated by the high incidence of epitheliomas on the hands of English locomotive firemen, and by the growths on the skin of the chest among an Indian religious

sect who carry hot vessels suspended around their necks.

A variety of cancers can be influenced by the rays of the sun, X-rays and radium. It is well known that individuals constantly exposed to the sun are prone to develop skin cancers. These growths are most frequently seen in blond persons whose epithelial cells lack the protection of the pigment of the brunette or of the dark skinned races.

The tragic end of many X-ray and radium pioneer workers gave abundant evidence of the effect of the irritation of these rays. Skin cancers have been induced in laboratory animals by frequent exposure to ultraviolet rays.

Malignant tumors have been frequently observed among workers in radio-active substances. Miners who inhale dust containing this material have a high incidence of cancer of the lungs, and workers in luminous material who habitually put their paint brushes in their mouths develop sarcoma of the bones.

The group of biologic irritants is also large and frequently involves both tissue damage and bacterial infection. Chronic breaks in the continuity of epithelial coverings is a source of irritation. Examples of this occur in many parts of the body. Fissure of the lip often precedes epithelioma. Cancer of the cervix uteri is most often found among women who have suffered birth trauma and have not had adequate treatment. It is rarely seen among those who have not borne children or who have had adequate repair of lacerations.

Cancer of the stomach begins in chronic benign ulcers in a considerable number of cases. There is serious debate of this and most writers note a low incidence. I studied a large group of cases of cancer of the stomach and found suggestive but of course not conclusive evidence of pre-existing benign ulcer in about 25 per cent of the cases. Chronic ulcerative lesions of the colon often precede malignant growth. Stagnation of secretions from glands plays a part in irritating the surrounding cells. Wens of long standing not infrequently have malignant growths from their epithelial lining. Adair found that 85 per cent of a series of breast cancers gave a history of stagnation or caking of the breasts. This has been confirmed in the laboratory by ligation of nipples of animals resulting in a high percentage of malignant breast tumors. The condition of the breast described as chronic cystic mastitis apparently

results from endocrine disturbances. It causes a retention of material in the glands and ducts and is generally regarded as being followed by cancer in a percentage well above the normal breast.

The association of cancer and diseases of infectious origin is open to question but there are several very suggestive incidents. Tuberculosis and cancer of the lung are a combination not infrequently encountered and the white spot of syphilis in the tongue has been seen to become malignant. Certain tropical diseases and fungus infections are associated with malignant growths.

Chronic lesions of the skin, such as deep scars from burns which tend to develop fissures and chronic leg ulcers, are sometimes the site of epitheliomas.

SUMMARY

This review of the various factors which may influence the development of malignant tumors is superficial, yet it emphasizes two points: first, there is no one specific cause of malignant growths, and, second, a very different combination of factors may result in the same type of tumor.

The possible factors considered are hereditary predisposition, environment, faulty embryological development, imbalance of vitamin intake, endocrine dyscrasia, metabolic disturbance, immunity, susceptibility, pre-existing benign tumor, and chemical, physical and biologic irritants.

As an illustration of this conception of the etiology of malignant disease, consider two women each with the same type of cancer of the breast. One has a predisposition to cancer by inheritance; she goes through a normal pregnancy and during lactation has caked breast. Years later some other factor, perhaps some metabolic disturbance combined with the hereditary tendency and the damage of stagnation, completes the necessary influences to initiate the new growth. The other has an endocrine dyscrasia which results in chronic cystic mastitis. After years of irritation, perhaps other endocrine disturbances occur and these factors combined with some chemical irritant result in malignant growth.

It seems to me that thorough study of cancer patients in tumor clinics by clinical, physiological, chemical and pathological specialists may result in an accumulation of data from which we may deduce more definitely the causative factors of malignant disease and thereby learn to eliminate them sufficiently to prevent the development of malignant tumors.

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PSYCHOLOGICAL CONDITIONING.*

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One hesitates somewhat in addressing a group whose avowed purpose is the shaping of the minds of children. In his posthumously published book "Something of Myself", Rudyard Kipling quotes "Give me the first six years of a child's life and you may have the rest."

Because I am afraid an interpretation not intended might be put upon some of my remarks, thereby doing indirect harm to some child, I shall indulge in no new theories nor fanciful formulations, but shall stay to the beaten path of the written time-tested opinions of men who have grown gray in the prac-

tice of mental medicine and from an experience of some fifteen years as a psychiatrist.

The relationship of child to parent is not unmixed. Children manifest a varied interest in their parents. Father and mother may attempt to play like parts in the child's world and its nurture and education, but the child itself often exhibits a strange purpose to choose the objects of its love, its fear, its antagonisms. Emotional development occurs *pari passu* with the struggle for independence.

Young children do not differentiate and it is only when the unpleasant realities of existence force themselves inexorably upon the child's mind that it makes comparisons, becomes aware of differences and shades

*Read by invitation before a meeting of the Parent-Teachers Association, George Wythe School, at Newport News, Va., March 3, 1938.

of meaning. The young child's substitute for differentiation is identification, and one individual who acts in the same way as another is identified in the child's mind with the other. Most usual it is for children to identify people with animals, and in the phantasy of the child, the parents take the animal form. Perhaps some of the expressions of our literature when referring to an individual as "a roaring lion", "an old bear", are the ghostly survivals of these childhood memories.

Parents should never forget the extreme interest and curiosity of the child in the activities of its parents. This is entirely normal, and is the child's greatest stimulus in the acquisition of knowledge and its chief incentive to investigation and discovery. This interest is due, of course, primarily to the child's affective (emotional) interest in the parents. And here, too, perhaps, we have a cue for the teacher. To elicit the child's interest, the teacher must do something more than correctly present the facts; the teacher must also arouse some emotion or other in the student. Again I quote Kipling, with some misgiving lest it be thought that I approve of temper in the school room. Kipling says, "One learns more from a good scholar in a rage than from a score of lucid and laborious drudges. . . ." And I think what he meant was that some sort of emotional response must be aroused in the student.

Parents and teachers must have insight into the phantasy life of children to deal intelligently with them. Of course, as the child grows older and reality obtrudes more and more urgently, this phantasy life recedes more and more into the background, but it has been a part of all children; it frequently crops out in an older sick, sensitive or neurotic child. Parents especially must adapt themselves to this phantasy world of their children. Could there be anything more pathetic than a parent so engrossed in the world of reality that he has no conception of the world in which his three- or four-year-old child lives! I hope all of you know that beautiful story of Dostoyevsky's "A Beggar Boy at Christ's Christmas Tree." In this story a famished Russian tot looked in at the window of a room filled with food, sweets, and laughing happy children. The contrast between the vivid reality of the cold, hunger and death facing him and the bright phantasies of his mind is shown with manifest fidelity. On the one hand, lights, laughter, clothes, music, dancing dolls, and delight; and on the other, a frozen, frightened,

famished child to whom a copper coin meant nothing, but the Christmas tree everything.

It is of interest to note children at play and to listen to their conversation at such time, without permitting them to be sufficiently aware of the presence of an adult to develop self-consciousness or shyness. It will be noted at such time that the children, and, of course, I speak now largely of children of the pre-school age, will not so much converse with one another as they will toy with their own thoughts in the other's company. A set of fancies of one child stimulates the verbalized actions of the other. No comparisons are made; merely the exhibition of greater rival possessions.

It seems hardly debatable that early memories have a great deal to do with shaping the lives, forming the characters, and affecting the health and happiness of us all. It may be worthwhile, therefore, to say something briefly about memory. I think it is safe to assume that definite memory occurs oftenest perhaps between one and two years; it may occur earlier. Doubt has been thrown upon the validity of these memories of very early age, owing to the fact that they must of necessity, when they are related in later life, be translated into adult language and built up into somewhat more elaborate structures due to adult experience, yet there is little doubt, as I say, that memory extends back certainly to between the first and second years in most individuals. As to memory, too, it must be recalled that memory may exist without the power of immediate recall. We are all familiar with the experience of trying to recall some name or incident without success and then to have it recur to us spontaneously later.

Because delinquency frequently is first manifested in the school, it is germane to our theme to say something about it here. Just what exact value to give to the different factors which may be operative, we do not know, and in the attempt to determine this, constant study is being expended. Environmental circumstances, physical stigmata, bad inheritance, certainly operate in some cases but not in all. The genotype is studied more and more in all branches of medicine and in psychiatry probably more than in the others. But perhaps the weight of opinion now is that juvenile delinquency is the psychological response to familial and social situations. Though this may be our belief, yet it certainly lacks much of being an entirely satisfactory theory. Sometimes the school bad boy who, perhaps, pilfers in a

small way and plays hookey, not only later does not always become an embezzler, but may become the president of a bank and a respected citizen. On the contrary, sometimes it happens that the prize winner at school or the constant attendant at Sunday School becomes a thief, an absconder or worse. We have only to read the newspapers to learn this much. The adult criminal is not invariably the product of the bad boy or head strong child. Mental disorder of a gross type emerges sometimes from apparently good and intellectual soil, and in families in comfortable or luxurious circumstances.

We hear much of the contrasting influence of heredity and environment, yet the two are more or less intimately interwoven. M. Bleuler of Switzerland writes: "In this connection I may mention Tiermer's investigation of the social behavior of a certain village through a number of centuries (*Archiv. f. Rassenbiologie*, 5, 1908). Tiermer found that the same families generally maintained a definite tradition in relation to personal initiative, sociability, progressiveness, tendency toward anti-social actions, politics, etc. Hardly any influence was exerted on the sociological type of the family by the women who constantly entered it by marriage. This would seem to indicate that environment as manifested in family traditions and external conditions of life is of considerable importance in the formation of character. . . ."

To return again to the very young child, speech forms probably the most intricate of the psychological attainments of childhood. The child starts his wordly external existence with a cry which within a few weeks becomes different for hunger and other discomfort. Signs indicative of pleasure can be noted at three months; at four months laughter begins, and at five eagerness. Words like "da-da" and "ma-ma" and "bye-bye" are noted about nine months. At a year the little mind stores a vocabulary of three or four words; at two it is near three hundred; at six years three thousand; and at twelve years, reckoned on the Stanford-Binet scale, over fourteen thousand. Large differences, of course, are observed in different individuals, and enormous differences when retarded are compared with precocious children.

Verbs are used relatively much more frequently by children than by adults.

It has been shown that during the first seven years the child's speech is markedly egocentric, his conver-

sation having the nature of a monologue. Around eight years actual communication of thought becomes typical, and definite concepts of judgment and reasoning begin to appear. At this time the childish lying, which is normal and due to the immaturity of its knowledge of language forms, also begins to fade into the mental background.

The growth of the child's intelligence is a continuing process from birth. Through experience and the development of his powers of observation, he learns to adapt himself to the world about him. He learns to react to cues; he looks at the sights, listens to the sounds and observes the relation between things in his immediate surroundings. Before his first birthday he shows insight. If his toys are tied to strings to his high chair, he soon learns to toss them from him and pull them back by means of the string. At three years he will build a bridge of three blocks; at five years, defines words in terms of use. And as the years go on he gradually acquires notions of similarity, truth, error, cause and effect. His intellectual interests, however, are in the concrete things of his world and he has but little concern with the abstract. Much of his concealed thinking is primitive and there is certainly much truth in the belief that a healthy normal young boy is at heart right much of a savage. Although the notion that each individual, in his development, goes through the stages of the evolution of the race is not to be accepted too literally, yet the theory does have some applicability to the intellectual development of the child.

Mental growth is accompanied by a constant ascent of the individuality. The newborn child seems a rudimentary and vegetative organism, but the process of integration begins at once and progresses rapidly into the constantly changing pattern of attitudes, habits, postures, predispositions to action that make up that individual's personality.

The personality will be moulded by endogenous and exogenous factors. The endogenous factors are temperamental qualities, constitutional type and endocrine balance. The manifest behavior patterns, though, are strikingly shaped by the exogenous factors through social encounter and by the workings of the conditioned reflex. The effect of the nutritional presexual and sexual factors is also great as life goes on to maturity.

The development of the child's mind, from the standpoint of personality, is characterized by the

gradual achievement of emotional independence, that is a gradual breaking off from the parental nurture upon which the infant is completely dependent. Hence the parent-child relationship is probably most important of all in determining whether the child reaches psychological maturity or not. Not only does the wise parent do nothing to retard the child from the goal of emotional independence, but rather he encourages and aids its attainment. To be tied to the parents apron strings is one of the surest of all ways to invite a later breakdown into psychoneurosis or a frank psychosis when the child becomes an adult.

We hear a great deal about the only son or the favorite or only child. Disabuse your minds of any idea that the only son or favorite child is necessarily doomed to neurosis or failure. Most of you probably know of brilliant examples to the contrary. Yet the only or favorite child is in an unfortunate position in that he does not learn early to adjust to his equals. Such a one I remember right here in this city. He was very blasé; he was not interested in the pursuits or amusements of other children, and he was far from popular with them. He was very precocious and ruled his own home with a tyranny that was absolute. He was the only child of a mother whose prospects of further child bearing were almost none, and he had been very ill when a very young child. Thus a situation occurred which he was not slow to take advantage of, and when I saw him at the age of eleven years he had already a tic (habit spasm) of psychogenic origin, and because of the attitude of his parents his chances of avoiding a psychoneurosis were slim. Of course it is obvious that a child so placed, who is never denied anything, never punished, never dealt with severely, when it reaches adult life and meets the deprivations and disappointments normal to that stage, is apt to become enraged, depressed, morose and mentally sick.

Things are bound to go badly with an individual when he becomes the centre round which his thoughts, feelings and actions habitually revolve. In the culture of the mind, the emotional must not be developed at the expense of the intellectual. "I call man's inability to moderate and control the affective or emotional element in his nature, slavery," said Spinoza. "For man, under the dominion of his affections, is not master of himself, but is controlled by fate, as it were, so that, in seeing and even ap-

proving the better course, he, nevertheless, feels himself constrained to follow the worse."

Dr. Henry Maudsley of England was a great psychiatrist of a generation ago. His words bear the authoritative weight of a scholar and an experienced physician. "Men seldom break from great intellectual activity unless it is accompanied by emotional agitation. It is when the feelings are deeply engaged that the stability of the mind is most endangered, and when persons are said to have broken from over-work, the truth is usually that jealousies, frustrations, disappointments, ambitions, anxieties and fears are the real causes."

To you, who are parents and teachers, it may be well to ask the question, "What should be the real aim of education?" I will attempt to answer it by quoting Maudsley. "Unhappily," he says, "we are not yet agreed as to what should be the true aim and character of education. Regarding the subject from a scientific point of view, the best education would seem to be that which was directed to teach man to understand himself and to understand the nature which surrounds him, and of which he is a part and product; so to enable him as its conscious minister and interpreter to bring himself into harmony with nature in his thoughts and actions, and so promote the progressing evolution of nature through him—its conscious self. The highest evolution of which man's being is capable, physically, morally and intellectually, through knowledge of and obedience to those natural laws which govern not only the physical world but not less surely every thought and feeling which enters into his mind to conceive—must be the aim of any education founded on a truly scientific psychology. But if this be the true aim of education, how vast a revolution remains to be accomplished! How many things are men yet taught which they ought not to be taught. To lay down the principles of mental hygiene on a scientific basis would, alas, be to offend many cherished beliefs and to go counter to the convictions of all but a small minority of mankind. Nevertheless, I believe that the aims of true education would, if sincerely recognized and earnestly pursued, do more than all the maxims of philosophy have done, and all the arts of medicine can do to lessen the amount of insanity on earth. . . ."

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PRESENT PREVENTIVE PROGRAMS FOR FEEBLEMINDED AND MENTALLY ILL PEOPLE IN VIRGINIA.*

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The interest in the prevention of mental disease and feeble-mindedness began years ago when Mental Hygiene was recognized as a branch of medicine. Physicians treating patients suffering from these disorders attempted to find the cause and then to expound theories of how such illness may be avoided. Many extreme and bizarre ideas were advocated during this period as was to be expected during this developmental stage of psychiatric technic.

Prior to the World War psychiatry was limited to institutions and the general public had little, if any, knowledge concerning psychogenic disorders as they were cloaked in mystery. After the World War the term psychiatry gradually became associated with a great host of disorders, including behavior problems in children, domestic difficulties and social maladjustment.

Since this time much effort has been made to extend the preventive measures as there was a gradual increase of the population of the mental institutions and it was not sufficient to wait until an individual became ill enough to be placed in an institution for treatment. The National Committee for Mental Hygiene established clinics for such individuals in the larger cities and proved the value of such work. These clinics proved to be educational and broadened the scope of the work in a very short period of time. In Virginia the first clinic to be established was the Children's Memorial Clinic in 1924, by a group of interested citizens of Richmond, as a child guidance clinic and accepts cases only within the city.

The establishment of the Bureau of Mental Hygiene in the Department of Public Welfare in 1929

under the direction of Dr. William F. Drewry aroused interest in the preventive phase of psychiatry. Psychiatrists in private practice saw the need of such a program but prior to this time there was no one available who could unite the individual efforts. Dr. William F. Drewry devoted the latter years of his life to the development of a Mental Hygiene Program in Virginia and to increasing the facilities for the prevention of mental disorders.

A mobile clinic operated about one year and visited three cities, Roanoke, Danville and Norfolk, at regular intervals. The lack of funds caused the abandonment of this type of clinic, although it was successful, leaving only two clinics in the State, both located in Richmond, The Children's Memorial Clinic and the State Mental Hygiene Clinic.

In 1934, although there was only the single personnel of the Mental Hygiene Clinic to do the work, diagnostic clinics were established which visited the counties whenever possible, usually remaining one or two days at a time. The psychiatrist, psychologist and psychiatric social worker would visit the county at a previously arranged date and with the aid of the local social worker would examine four or five individuals. The social history and physical examinations were supplied by the local worker or agency on each individual to be examined. When the examinations were completed a conference was held and each case discussed and the recommendations of the clinic given as to the best solution of the difficulty.

A written report was sent to the referring agency several days later which contained the essentials of each examination and the recommendations for helping the individual.

*Presented at the meeting of the State Conference of Social Workers in Richmond, May 6, 1938.

During the past year there was established in most of the 100 counties of the State, local departments of Public Welfare and this organization has greatly facilitated the work of a clinic in the community by giving additional aid, also in carrying out the recommendations. With such a set-up in each county it is possible to carry out treatment through a trained worker after completion of the diagnostic examination and continue contact with the patient. This is indeed an extension of the preventive program as well as the educational program, as better results are obtained which increases the interest of the people in the community. In following this routine, not only is the local worker brought into close contact with the clinic but also the local physicians, juvenile judges and people who are interested in improving the status of the "marginal individuals". After a visit to such a community it is noted that there is soon a request for help from other people, not associated with the Welfare Department, who recognize problems which were heretofore neglected as they were considered hopeless and had to be endured. It is not uncommon to have parents come long distances to have some member of the family examined at the clinic, whereas, before any educational program was followed, they were resentful of advice concerning their problem. If only a small per cent of the cases examined are prevented from the necessity of having to enter an institution for treatment, much has been saved in economic value to the individual and State, because, in addition to the cost of medical care, there is also the loss of the individual's earning power.

Thus, a few individuals prevented from having mental disorders would make the clinics valuable in a financial way and in human happiness.

In recent years a clinic was established at the University of Virginia, and regular monthly visits are made to Danville, Virginia. Similar clinics, according to reports, will be organized at several other places in the State by local agencies in an effort to supply the present demands which cannot be met by the Mental Hygiene Clinic. This clearly demonstrates that the diagnostic clinics and the educational program have been fruitful in creating the desire for a means of preventing mental disorders.

The work of the two clinics, located at Richmond and Charlottesville, continue as originally organized, devoting only certain days each week to traveling so that the routine cases can be accepted regularly.

The present program for Mental Hygiene has been extended to the schools in an effort to help adjust the child when the first symptoms of difficulty appear and to aid the teacher in dealing intelligently with the situation. Many children are problems in school, reacting in this way to a bad home situation, and they project their feelings to the teacher or to the school in general. There are others who are over-placed in school and are not capable of continuing with formal school work, but they can be trained to do some type of vocational work. These are just two of the many situations encountered by the school teachers, and if the child can be guided into the correct channel he will become cooperative and an ideal pupil. When such a child is forced to continue in school and cannot compete with the other children, he soon shows evidence of a mental disorder.

The teachers college in Farmville has requested us on numerous occasions to visit them and give the future teachers a basic understanding of the principles of Mental Hygiene and how to recognize the handicapped child. The teachers exert a powerful influence in the community and are in a position to help the child at an early stage. This position is emphasized by the statement of the late Dr. Frankwood Williams who, several years ago, estimated that there were 1,000,000 children in the public schools who would become inmates of mental hospitals. Many children have mental disorders, the first signs of which are recognizable in the younger years and at this stage are preventable. The services of the clinic are offered to schools so that special classes may be established to train the mentally retarded and handicapped children so that they will not have to encounter failure each year because they are unable to compete with normal children. Few schools have such classes for special instruction and the need is becoming greater each year.

The courts are urged to use the facilities of the clinic whenever there is a question of the individual's mental status. At this time the trial justices are particularly interested in this service as many individuals who are mentally ill manifest anti-social conduct which brings them into the courts. When such individuals are confined to penal institutions they have little chance to recover and either become worse while confined or commit worse crimes when released in order to get revenge.

It is believed essential that physicians understand

the program, and papers are presented at frequent intervals at meetings in order that they may be informed of this work. The cooperation of physicians and their aid in the prevention of mental diseases makes the program possible.

The physicians are expected to be the leaders in the local communities and are in a position to advise patients where the best treatment can be secured, especially when the patients are unable to pay for such treatment. There are out-patient departments in each of the two medical schools and each has a neuropsychiatric service. Individuals from any part of the State may receive treatment here and be confident that they will receive the services of the most competent psychiatrists. It is hoped that in the very near future psychopathic wards will be available at the medical schools for the diagnosis and treatment of mental disorders.

Another preventive measure that became effective in 1924 was the sterilization law. This law made it possible to sterilize the feeble-minded individual which would prevent them from having families they could neither rear nor provide with the necessities of life. There are many that advocate sterilization in certain cases of insanity, especially when there is a family history of this disorder, as the offspring would have little chance of escaping the same affliction. Each year a large number of feeble-minded and mentally ill individuals are being sterilized in an effort to prevent the increase of these abnormal individuals.

Finally, it should be emphasized that the home is the logical place for the application of the principles of Mental Hygiene, as here the conduct of the average child forms its pattern. Talks before Parent-Teachers Associations and over the radio are helpful

in reaching the family group. The formation of a Mental Hygiene Society last year was a step forward, as the membership includes physicians, trained workers and the laity, all interested in the prevention of mental disorders. This organization will help mold public opinion which is the greatest and most effective weapon that can be used to combat the situation we are now facing.

CONCLUSIONS

The present prevention programs for the feeble-minded and mentally ill in Virginia are intended to reach every individual. This is necessary when it is realized that the present rate of mental diseases is 317.5 per 100,000 of the general population and the institutions are being crowded with patients. Many of the mental diseases are preventable if recognized early and proper treatment instituted.

The following facilities are available in Virginia at this time:

1. State Mental Hygiene Clinic in Richmond.
2. Children's Memorial Clinic in Richmond.
3. University of Virginia Mental Hygiene Clinic, Charlottesville.
4. Medical College of Virginia Clinic, Richmond.
5. The Mental Hospitals.
6. Psychiatrists with the Family Service Society, Richmond.

It is readily understood that the above facilities are not adequate and must be expanded if we expect to cope with the situation now confronting the people of Virginia. It is necessary to decide whether it is better to spend more for prevention or vast sums for the care and treatment of the mentally ill. Certainly it would be wise to recall the adage, "An ounce of prevention is worth a pound of cure".

1014 East Clay Street.

PROBLEMS OF THE RURAL PHYSICIAN OF YESTERYEAR.*

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Responding to the task laid upon me to provide a paper for this meeting, instead of attempting to discuss some new or scientific medical subject, I have chosen rather, even at the risk of boring you, briefly to outline some of my personal experiences in the early years of my practice.

*Read before the Orange County Medical Society, at Orange, Va., on April 1, 1938.

Turning back the pages on more than forty years of medical practice one must realize that he has lived in a period of medical progress greater and more rapid than any that has ever previously occurred in the world's history.

A short description of the then existing physical environment will serve as a background upon which

to envisage the problems which confronted the country doctor of this section in years gone by.

One returning to Orange after an absence of more than forty years would doubtless pause a bit before he could properly orient himself. Looking for public buildings from which to take his bearings, the freight depot and court house would give him confidence that he had landed in the right village. Of the churches in his memory the Methodist would look most familiar. A parish hall has been added on the south side at the rear of St. Thomas's Episcopal church but its spire still points to the same place in the heavens. The old Presbyterian church building is now a filling station. The Baptist church of that day became a prey years ago to one of the disastrous fires which visited Orange before the organization of our excellent volunteer fire company. Scarcely a dozen residences on Main Street remain which the passing years have not greatly remodeled or built anew.

In rainy weather he would recall the street itself—a lane of mud, with stepping stones for the convenience of the pedestrian who wished to cross; infrequent lamp posts surmounted by smoky kerosene lamps lighted his steps along the bucking board walks during the darkness of night.

Going over in his mind the business and professional men, he needs must be saddened to learn how few the Grim Reaper has left. I can recall only six who were here when I came in January, 1897—Dr. C. H. Moncure, L. S. Ricketts, Carroll Slaughter, G. J. Browning, C. D. Quisenberry, and A. J. Harlow.

School House Hill, Burgess's Hill and Marshall Heights were open fields containing about one residence each.

Springs and open wells furnished the water supply; sanitary privies did not exist; with slight substitution, "Where the tree falleth there let it lie" might well have been the slogan of the town of Orange for its disposal of human excrement. Pig pens were numerous; flies in abundance carried on then, as ever, their disease spreading traffic.

As medical men you will have little trouble in forming some idea of the problems this state of affairs produced. Being made a member of the town council in the early years of my residence here, I *promptly* abolished pigs from the corporation; this so enraged a majority of the voters that I was as *promptly* abolished from the council at the next elec-

tion, and pigs came again and basked as of old in all their odorous glory! Realizing that it was a matter of education I continued my agitation to improve the sanitary conditions. * The seeds thus sown have borne fruit and, while the credit for the successful harvest goes to others, I am well satisfied to feel that my efforts were not in vain. In the field of preventive medicine I battled for years before compulsory vaccination for school children began to be enforced. Smallpox was not infrequent. The minutes of The Orange County Board of Health will show that during the first ten years of its existence the county spent hundreds of dollars in isolating, treating and guarding cases of smallpox.

Diphtheria antitoxin came on the scene, I think, about 1889 or '90. I gave the first dose ever administered in Orange. Personally I feel that a young life was saved thereby, but there were not a few who contended the child would have gotten well anyhow. Well, who knows? Perchance they were right.

There were no telephones over which to summon you nor closed automobiles to speed you on your way; darkness and rain, snow and sleet had to be encountered in the open and be battled against single-handed and alone. In the small hours of the night, however dark and stormy, a messenger calling from the street replaced the nerve-wracking clang of the telephone bell now at your bedside.

Your medical supplies were carried in saddle bags thrown across your horse, with an obstetrical roll strapped to your saddle, unless perchance the condition of the roads permitted you to travel in a buggy. Responding to an urgent call some ten or twelve miles in the country to a confinement case, arriving to find that what the patient took to be her "waters breaking" was only the indignant expression of resentment of an over-crowded bladder, left you to decide whether to return home, or camp and await results; the latter was often the wiser course.

We knew nothing of X-rays and radium until the late nineties; typhoid vaccine, I believe, in 1913. Typhoid fever was practically always with us, and diphtheria took its toll of lives that now would be saved. I do not know just when intubation came into vogue; certainly I knew nothing about it in the early years of my practice, but had to do more than one hurried tracheotomy.

Let me digress right here to say, however much we may deplore the trend toward state medicine, I feel that any opposition to the work of the State

Board of Health in its efforts to immunize the children of the county against diphtheria is unwise and unjust. Doubtless there are some, perfectly able to pay for this service, who take advantage of the opportunity to get it done for nothing, but any family physician who has been diligent in his efforts to have his clientele immunized against infectious diseases will lose little by this work of the state; nay more, he will often gain much in the lessened number of charity cases he will be called upon to treat. Any doctor who has stood by the bedside of his own child gasping for breath with laryngeal diphtheria—to be saved only by hurried surgical work—will give the state representatives in this work his hearty cooperation and bid them God speed!

Richmond and Washington had the nearest hospitals to us in the early years of which I speak, and even after the opening of the Charlottesville hospitals, poor roads and slow methods of travel often threw the physician back on his own in cases of emergency.

From even this ragged description you will readily realize it was demanded of the general practitioner to do many things, surgical and otherwise, that he would not attempt in this day of easily accessible and well-equipped hospitals.

Considering it the *best chance* that circumstances permitted me to give the patient, I did surgical work then that I would feel well-nigh criminal in undertaking now—having opened more than one abdomen to remove a gangrenous appendix, to resect a bowel, or to suture bullet wounds of the intestines. Thanks to the marvelous recuperative powers of Mother Nature and the goodness of God, these patients all recovered.

Picture if you can the forlorn feelings of a youngster leaving the University of Virginia, armed with his M. D. degree and only such medical knowledge as he has been able to glean from the lecture halls, with absolutely no clinical experience, and you have your speaker!

While waiting at home to learn the result of my efforts before the State Board of Examiners, and during the absence of the community physician, I was called to a case. Well do I remember wondering what on earth the patient could have that I would be able to diagnose, and, if diagnosed, what the treatment would be. During this same period I was called to an obstetrical case, which was the very first I had ever seen! It is true that I had dragged

a rag baby through a manikin *ad nauseam*, but this gave me little confidence as I faced the suffering woman in the throes of labor and realized that if *she knew* how little *I knew*, she would certainly die of shock. After short stays in The Mothers' and Babies', Polyclinic and Post-Graduate Hospitals in New York, I returned to the country and hung out my shingle for practice. With so little hospital experience, it was fortunate indeed for me, as well as for the public, that I quickly became associated with Dr. E. W. Row, of honored memory, a man whose only code of ethics was the Golden Rule; his adaptable personality rendered him equally at ease with the high and the low, the rich and the poor, the cultured and the rude; possessing a keen sense of quiet humor, he was an inimitable teller of jokes and, whenever he felt inclined to tap his exhaustless supply, never lacked for an audience of eager and attentive listeners.

For the privilege of drinking at the fountain of his rich experience and feeding upon the bread of his wide knowledge, so freely given, I shall ever feel profoundly grateful. He belonged to the type of family physician now well-nigh extinct—so much the worse for suffering humanity. To this association with Dr. Row, which lasted throughout the remainder of his life, I feel largely indebted for whatever measure of success I may have attained. Peace to his ashes!

These remarks, of course, are prompted by an experience gathered from a rather restricted area, but I refer you to the address of the president of the A.M.A. last June for a lucid description of conditions in the country at large. We find: "In those days (of which we speak) there was no knowledge of insect-borne diseases, food deficiency diseases—except possibly scurvy—vitamins, endocrines, hormones, insulin, virus diseases, the electrocardiogram, allergy, serology, standardized drugs, and other innumerable improvements of modern therapy. These are the harvest of the last forty years. The average modern medical student tries to acquire them in four hectic years of forced mental feeding. Some were taught ten, twenty or thirty years ago. Whatever the date of graduation, however, the newly fledged doctor is a perishable article—sold under a guaranty that is good only on *that* date. There is not even an expiration date as on vaccine or serum. In a few months, certainly in a few years, unless he keeps up with the march of progress, he lags behind. The

graduate of ten or twenty years ago has had to add to his basic information as much as he acquired in his college course, if not more."

I have often wondered why so comparatively few of the recent graduates seem willing to settle in rural communities. The average young doctor, if he is anything at all, will be a greater factor for good in such a location than he will likely ever become in the over-crowded cities. The graver duties and heavier responsibilities he will have to meet in the country will serve to bring to the front and develop his native abilities. "His duties and responsibilities are those that involve the deepest interest of humanity, those that lie closest to the human heart". The country doctor, financially speaking, is probably the poorest paid man in the world, and in many instances will fully appreciate the following lines:

"God and the doctor we alike adore
When on the brink of danger, not before;
The danger past, both are alike requited,
God is forgot and the doctor slighted."

Let us not forget, however, that he will often find his richest reward in the love and grateful affection of his people; he knows their inner life; he is confided in and intrusted with their most important secrets; he learns to keep them and is trusted as no

other man is trusted—not even their spiritual advisers. The life of the country doctor has a certain something, mystic charm let us say, that I would not exchange for that of any metropolitan physician, notwithstanding the many greater advantages of the latter. The meridian passed and traveling down the western hemisphere of life, I shudder to think, when looking back, what a menace I must have been in those early days to suffering humanity. Striving as best I could to keep somewhat in touch with the rapid advances in the medical world, and looking ever to the "Great Physician" for guidance, I feel that I can claim without undue immodesty at least an average degree of success. I claim and am proud of at least two distinctions—one in the medical, and one in the social world, viz: The first patient I ever had is still alive, and I have been living with the same wife for forty-five years!

After battling with disease and death for many years, one inevitably pauses at times to think on life itself. What is life? What does it mean? For my part, I am convinced that no one has ever found the true meaning of life or a solid foundation upon which to build until he is able to look up and say with the apostle of old "My Lord and My God".

CARBUNCLE OF THE KIDNEY.*

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I have been assigned the subject of carbuncle of the kidney. I wish to discuss it with the intention of making us all more conscious of such a clinical entity, and to elaborate on a few points in making a diagnosis which, by the way, is very difficult. Out of sixty-five cases reported until a few years ago, the diagnosis was made before operation in only eleven cases.

Carbuncle of the kidney is, strictly speaking, just what its name implies, a circumscribed multilocular abscess of the renal parenchyma. In our discussion, I shall include any deep-seated infection around the kidney, such as subcortical abscesses, septic infarcts and perinephritic abscess, since the obscure diagnosis and treatment are practically the same in all cases.

This condition is almost always metastatic, and usually arises from a primary focus of infection elsewhere in the body. The causative organism is most frequently the staphylococcus aureus.

SOME POINTS IN DIAGNOSIS

First, a painstaking complete history. A large majority of these patients give a history of previous infection of staphylococcus origin, usually located in the skin, such as carbuncles, furuncles and boils, anywhere from a few days to several months before the kidney symptoms are noticed. Infections in the respiratory tract are also a common cause. We may get a history of a severe cold, bronchitis or pneumonia. The patient may have completely recovered many days before renal symptoms develop. Another cause, in my opinion, is ureteral obstruction, especially with an infected urine. This, however, is apt

*Read before the New York Academy of Medicine Graduate Fortnight at the New York Polyclinic Hospital, November 8, 1937.

to cause multiple abscess rather than a single carbuncle.

The second point in diagnosis is that pain is complained of in the region of the infected kidney in all cases. That the pain is not definitely placed and well localized is evidenced by the difficulty in diagnosis as shown by the fact there was an average delay of sixty-one days before proper treatment was instituted in forty-two cases recorded. However, we always have pain in the flank on the affected side and this should make us think of the kidney in cases of long-standing malaise, progressive prostration and fever. Chills are frequently complained of and signs of pleuritic irritation are very common. The whole clinical picture may simulate that of a blood-stream infection and Drs. Grauer and Purkin of Boston are of the opinion that an underlying septicemia is often present. Inflammatory changes extending through the diaphragm have often resulted in misleading signs in the chest of the affected side, such as diminished respiratory excursion, tenderness over the lower ribs, dullness and pain on deep breathing.

A third point is that tenderness in the region of the kidney is almost always present. This can best be elicited by a sudden jar, such as striking lightly with the fist. This tenderness is accompanied by resistance to palpation in the overlying muscles. Also, if the infection has extended to the perirenal tissues, we will notice a definite bulging in the lumbar region, a perinephritic abscess.

Fourth, laboratory findings. We nearly always find an increased number of pus cells but not enough to be convincing. Red blood cells in the urine are often found and should make us suspicious of trouble in the kidney, especially with the foregoing history. The blood count is usually high, and a high percentage of positive blood cultures were found in the cases recorded.

Fifth, cystoscopic investigation. This means of diagnosis is not very conclusive. However, we nearly always find some filling defect in the kidney pelvis and calices which would indicate any tumor, but with other signs and symptoms should be very helpful. The kidney is usually enlarged. The urine collected may not be grossly pathologic but a functional test always shows a diminished function on the affected side. In some cases cystoscopic investigation is entirely negative except for diminished function, as was the fact in one of our cases. The

clinical confusion may be accounted for in part by the lack of urinary symptoms, but we must remember that the carbuncle occupies a position in the parenchyma of the kidney and may not communicate with the urinary excretory passages.

TREATMENT

Once a diagnosis is made, delay in instituting proper treatment in these cases is fatal. The patient should be operated immediately. Three types of operation can be done: First, incision and drainage, followed by nephrectomy; second, enucleation of the carbuncle; third, nephrectomy.

Enucleation of the carbuncle with drainage is very satisfactory in some cases but very few lend themselves to such treatment. Incision and drainage followed by nephrectomy later, or immediate nephrectomy depending upon the condition of the patient, gives the best result in the majority of cases, except in a subcapsular, cortical infection, a decapsulation and drainage cure these. I shall now give you the case record briefly of three of our cases.

1. Dorothy O'N., age twenty-eight, housewife. This case illustrates very well the difficulty in making diagnosis. She was admitted April 8, 1937, under the influence of alcohol, complaining of pain in the right lower quadrant, rigidity over the right abdomen, temperature ninety-nine and one-half, white count 16,000, few red cells in urine trace of albumen. No other urinary pathology was present. However, the patient complained of some frequency and burning on urination. A diagnosis of appendicitis was made and an immediate operation performed. The appendix, however, according to the operating surgeon, was normal. Many adhesions were freed. Pain continued but was more localized in the right flank and costo-vertebral angle. Large doses of morphine were demanded and given for this pain until April 20 when a urological consultation was asked. A cystoscopic investigation was done by Dr. D. A. Sinclair on that day. Inspection of the bladder was negative. Number 5 catheters were introduced to the pelvis of each kidney without difficulty. The drip was very rapid from the right side. About two ounces were obtained before the drip became normally intermittent. This was thought to be due to large quantities of water being drunk by the patient before examination rather than to a hydronephrosis. PSP function test showed diminished output from both sides. A pyelogram

was done which showed two very important defects—first, a stricture of ureter on the right side; second, with the patient in the upright position, the kidney did not drop, which sign is strongly indicative of perirenal infection. However, the psoas muscles were easily seen. The patient felt better the next day after this examination but after that continued to complain of pain, was very tender in the right costo-vertebral angle and the overlying muscles were rigid. The patient demanded frequent doses of morphine for pain, until the nursing staff thought she was a drug addict since no diagnosis had been made to account for the pain. This continued until April 27—three weeks after admission—when an exploratory lumbotomy was decided upon. This was done April 27, 1937. An oblique incision was made. The peritoneum was pushed back and the fatty capsule of the kidney exposed. This was removed by blunt dissection and the kidney exposed. No pus was seen during this manipulation. The kidney appeared normal. The entire right flank was explored up to the liver and downward toward the iliac fossa. Nothing abnormal was found. The kidney was decapsulated and returned to its bed. A Penrose drain was left in the lower angle of the wound. The wound was closed in the usual way.

Progress notes: These reveal that the patient complained of no more pain after the operation about four days post-operative. The note was made that the dressings were saturated with a foul-smelling pus-like material. Thin drainage continued for about five days, then gradually began to subside when the wound was irrigated with Dakin's solution by catheter. The patient was discharged from the hospital May 17.

The second case was Stella P., white, age twenty, housewife. Past history: This patient left the hospital—Obstetrical Department—three weeks ago. A Caesarean section had been performed, and had been followed by a bronchopneumonia from which she completely recovered. She remained well for three weeks when she suddenly commenced to have severe chills, followed by fever of 104 and 105, and complained of pain in the left kidney region. She was turned over to our department two days later. A catheterized specimen of urine showed innumerable pus cells and many red blood cells. She was cystoscoped next day. The bladder showed many blister-like objects in vault. Number 5 catheters were passed to the pelvis of each kidney without difficulty.

The drip from the right side was continuous for thirty minutes and very rapid. From the left the drip was slow and sometimes stopped all together. 5 cc. of distilled water were injected through the left catheter and then withdrawn very cloudy and with many large flakes of pus.

PSP was given intravenously and appeared from the right side in three minutes, while it appeared from the left in ten minutes in very poor concentration. The percentage from the right kidney was seven and one-half, but too small to estimate from the left.

Pyelogram showed hydronephrosis on the right side (compensatory), and a filling defect on the left, indicating tumor. The kidney did not drop when in upright position. X-ray of chest showed fixed diaphragm and congestion of the lungs, which is almost always the picture showed in infection around the kidney. This patient was very tender in the left flank and the overlying muscles were rigid. The leucocyte count was 15,000. The patient was critically ill and was operated on the same afternoon after the cystoscopic. A large kidney was easily removed.

Pathological report showed many small abscesses, especially in cortical portion of kidney. Diagnosis: Multiple septic infarcts of kidney.

This case was much more easy to diagnose than usual because the urinary symptoms were pronounced. She made an uneventful recovery and left the hospital in twenty days.

The third case was Mrs. Anna F., white, age thirty-nine, housewife.

Past history indicated there had been severe rheumatism in past three weeks, some sore throat, and nose bleeding at times. This, in my opinion, gives the cause of the kidney infection.

Present illness began one day before admission when she suddenly became very weak and noticed that she passed bloody urine. Passed blood several times during night. No pain. At first, I thought this was a case of bladder tumor, but on cystoscopic examination the bladder was negative except the mucous membrane was covered with many red spots resembling measles. The ureters were catheterized with considerable difficulty. The catheter could only be inserted about 25 cm. PSP was given and appeared from both sides in two minutes. The percentage was 12 per cent from the left and 2 per cent from the right, again illustrating the diminished

function on affected side. Pyelogram was negative on the left. On the right, the skiogram had penetrated into the kidney substance and this kidney was four and one-half cm. below the crest of the ilium. In this position, the ureter was kinked so that it was almost completely obstructed. The next day, after cystoscopy, the patient had chills and temperature went to 104½; the urine showed many pus cells and many red blood cells. The temperature remained high for several days. A catheter was inserted up the right ureter and left in position but no drainage was obtained. Five days after admission, due to the anuria on the right side and the extreme mobility of this kidney and kinked ureter, it was decided to operate. A nephrectomy was performed easily and the patient made an uneventful recovery.

The pathological report was multiple septic infarcts of kidney.

This case was also easily diagnosed because of urinary symptoms. The bleeding was probably due to sudden dropping of the right kidney and kinking of the right ureter.

CONCLUSION

I hope I have in a brief way made you conscious of a very serious clinical condition that is always fatal unless a correct diagnosis is made and proper treatment carried out. Let us remember the picture we have, a patient who has probably been sick for days or many weeks. He is extremely prostrated, and gives a history of infection months before, with prolonged temperature, often with chills. He complains of pain in the flank. On palpation, we find he is very tender in the flank complained of, especially on sudden jar. The muscles are resistant to palpation. The urine shows a few red cells. The pyelogram shows some filling defect, and the kidney does not drop when patient is in upright position. The functional test shows diminished function on that side. The blood count is high. No other diagnosis has been made.

In all cases of severe sepsis, if the local findings are carefully sought, a diagnosis of kidney infection can be made and treated successfully.

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ANO-RECTAL STRICTURE OF LYMPHOPATHIA VENEREA.*

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After many years of conflicting opinions, confusion of terms, and blind following of previous deductions, we are at last arriving at a better understanding of ano-rectal stricture.

Until fairly recently, only a few workers have been impressed with the significance of the relationship of lympho-granuloma inguinale to benign rectal strictures; of late this association has been better understood and appreciated generally.

While strictures of the rectum may be caused by many infectious agents (as well as various kinds of trauma, irritations and growths), we are coming to recognize more and more the common occurrence of the ano-rectal syndrome of lympho-granuloma inguinale.

"It is unfortunate that the diseases commonly known as granuloma inguinale and lympho-granuloma inguinale should have names so similar and confusing, yet be so dissimilar clinically and pathologically." In neither instance is the name descrip-

tive of the clinical or pathological picture, and this similarity of names leads one to believe that different phases of the same disease are being described, or that different terms are applied to the same disease.

In the light of its pathology and definite venereal origin, it is felt that the term *lymphopathia venerea*, as suggested by Hoffman in 1933, should be used for the term lympho-granuloma inguinale.

The principal clinical facts of this disease, first called lympho-granuloma inguinale, definitely a misnomer, are as follows: there is a primary lesion almost always on the genitalia, where the fresh virus has been rubbed into the skin or mucous membrane by sexual contact. It may be herpetiform or a small inflamed papule. It may be multiple, and sometimes there is a superficial ulceration. It heals without treatment in a few days, and is usually dismissed as a little herpes or pimple of no significance. It is painless and, if on the vaginal mucosa, always passes unnoticed.

Six to fifteen days after the appearance of this

*Read at a meeting of the Norfolk County Medical Society, December 13, 1937, Norfolk, Va.

primary lesion, the draining lymph nodes become involved in a very slow, progressive, destructive, inflammatory process. In the male, this inguinal adenitis runs a very prolonged course, somewhat similar to tuberculous lymphadenitis. The group of swollen glands become matted together; in multiple areas necrosis and suppuration occur; the overlying skin becomes a dark red, almost purple color and eventually, if not previously incised, multiple sinuses appear.

In women, the primary sore is rarely observed. Presumably the infection occurs on the cervix or mucosa of the vaginal vault, and at once involves the deeper lymphatics. Hence the characteristic inguinal adenopathy observed in the male is absent in the female. However, the involvement of the peri-rectal lymphatics occurs and the lymphoid tissue of the rectal wall itself becomes involved secondarily in this chronic, destructive, inflammatory process. Later the retractile scar tissue develops. Years later this scar tissue may produce lymph stasis and cause conditions, such as esthiomene to develop, as well as the tragic rectal stricture.

For the proper classification and a better understanding of ano-rectal stenosis, we are indebted to Frei of Germany, who, in 1925, demonstrated a specific diagnostic antigen, prepared from bacteriologically sterile pus from these cases, and Barthels and Biberstein, as well as Nesselrod, who so forcefully demonstrated the lymphatic drainage from the vagina to the peri-rectal nodes of Gerota.

That the Frei test is an absolute specific test for this condition has been defended by Frei in numerous publications, and has been confirmed by workers in all parts of the world. Once the Frei test becomes positive it remains so throughout life. Latent infection as well as the active disease will give a positive reaction; thus a positive test has perhaps less differential diagnostic value than a negative reaction, which definitely excludes the infection, either active or latent (except in the very early stage).

There seems to be no question as to the reliability of this test provided the antigen is potent. The extraordinarily high percentage of patients with benign strictures of the rectum who show a positive Frei test has been confirmed by many clinics, and this is the principal evidence which is offered to prove that these strictures are due to the late results of infection by the virus of lymphopathia venerea. According to Lazzari, "Excluding tumor and surgi-

cal trauma, every rectal stricture in the female admitted to the Cleveland City Hospital since 1931 has shown an associated positive Frei test." A word of caution, however—just because the Frei test is positive is no ground for concluding the rectal stricture is benign. Malignancy must be ruled out by biopsy in all cases.

There is a marked similarity in the history of these cases of lymphopathia venereal stenosis. They are usually negro females, past twenty-five years of age, in poor economic circumstances, who did not report for treatment until actual stenosis was present. Their chief complaints were difficulty in moving the bowels, painful defecation and bleeding or discharge from rectum. Ischio-rectal abscess, fistula and hemorrhoids were common complications, and some gave a history of "ribbon stools".

The lesion begins not far from the sphincter and can easily be palpated with the examining finger in all cases. Some of them show only a narrow shelf or ring of scar tissue; from this the pathology varies to complete stenosis of the entire rectum and sigmoid portions of the colon.

The stenosis is the end stage of the inflammation, the result of contraction of scar tissue which the colored race is especially good in forming. The original inflammation has been conquered by fibrosis, which makes this kind of "cure" worse than the original disease. Thus, these late cases resolve themselves into true cases of stenosis, and must be dealt with according to the degree of stenosis and associated secondary infection.

Simple dilatation, erring on the conservative side, usually suffices where the pathology is very limited, provided the patient receives the proper after-care. Where the stenosis is more extensive, as it usually is, it is necessary to resort to more radical procedures, if we hope to give more than dangerous temporary relief.

Colostomy seems a rather radical procedure for a benign condition, but the complete relief given this miserable group of unfortunates seems to me to justify its universal adoption in all severe lymphopathia venereal strictures. Colostomy not only is the sole procedure that gives lasting results, but is a safer procedure than repeated dilatations in the class of patients usually afflicted with this condition, as satisfactory cooperation seems to be impossible. After they have been partially relieved, they do not return until the stricture has again contracted to the

point of almost complete obstruction. I know of one case where septicemia developed from multiple abscesses about the rectum following dilatation. There are also fatal cases of peritonitis reported following dilatation of these brittle strictures. The almost constant presence of secondary infection often produces amyloid disease of the kidneys, cachexia, and activates latent pulmonary tuberculosis, so common in these patients, but not the etiological factor for the stenosis.

The operative procedure to be desired is a two-stage colostomy with rectal resection later. The proctitis accompanying the stricture offers a real technical difficulty and makes all rectal resection operations hazardous, leading to frequent recurrence. However a permanent two stage colostomy after the method of Mixer, without resection of the distal end, carries a very low mortality and morbidity rate, and gives excellent results.

Irrigation of the distal loop after the proximal bowel has its morning irrigation usually keeps this loop clean. There is a minimum discharge and discomfort from the stricture once the fecal stream has been side-tracked.

I prefer to have the patient wear a tight abdominal binder and cover the colostomy opening with vaseline gauze to wearing the usual colostomy bag, since there is no sucking out of the mucosa in the former as there is when a bag is worn, and the vaseline gauze is more comfortable and safe with proper care, including diet and morning irrigations. Then, too, with the Mixer technique, where the bowel is brought out through the rectus muscle, some sphincter control of the colostomy can be developed if there is not too much protrusion of the mucosa or scar tissue about the opening. Another advantage of this technique is that the contents of the proximal loop do not escape into the distal loop.

These patients, who are universally in the lower economic strata, are able to care for themselves adequately after colostomy, and in some instances find gainful occupations again.

In helping a patient decide in favor of a colostomy, or a "hole in the side" as they sometimes term it, I have found a talk with a patient who has a colostomy for the same condition the best means of convincing them.

In conclusion, I would like to present briefly a case of lymphopathia venereal rectal stenosis, that

is quite typical, and illustrates the relief afforded by colostomy.

November 18, 1936, this case was referred to me from the city clinic, where the patient had a long record of attendance. She complained of constant pain in the rectum, constipation, a slimy watery discharge from rectum, loss of weight and strength, nausea and vomiting.

Past Medical History.—Six normal pregnancies, last one in 1909; supravaginal hysterectomy, apparently for fibroid uterus, in 1916.

History of Present Illness.—About fifteen years ago, that is, around 1921, the patient began to complain of constipation, hemorrhoids, and "sore spots" around the rectum that discharged pus. Hemorrhoidectomy was done about a year after onset, but the relief afforded by this operation was only temporary. Following this a purulent discharge from her rectum developed, and this continued until this admission to the hospital. From that onset, her condition grew slowly but steadily worse. The latter part of 1935, pain in the rectum and constipation had developed to the point of causing her great distress. She steadily lost weight, dropping from 125 pounds in 1935, to eighty pounds on admission to hospital. A few weeks preceding admission, nausea and vomiting entered the picture.

Physical examination revealed an emaciated colored woman of fifty-six, with a facial expression of long suffering. Blood pressure 110/80; pulse eighty; respiration sixteen; temperature ninety-eight degrees; weight eighty pounds.

Head—Negative.

Eyes—React to light and accommodation.

Neck—Scrawny.

Heart—Sounds of fair quality, rhythm regular and normal, no enlargement to percussion.

Lungs—Respiratory murmur clear and distinct over every part of both lungs.

Abdomen—Flabby from loss of weight; no abdominal masses palpable; slight generalized abdominal tenderness.

Extremities—No edema.

Reflexes—Achilles and patellar normal and equal on both sides.

Vaginal Examination—An indurated irregular tubular mass was palpable through the posterior vaginal wall, extending as high as the examining finger could reach. Cervix well suspended, and es-

sentially negative. No adnexal masses palpable.

Rectal Examination—Disclosed a slimy water discharge, small external hemorrhoids, brawny induration about anus and perineum. The sphincter admitted examining finger, but just inside the sphincter a tight, dense, fibrous stricture suddenly stopped any further advance.

Laboratory Data:

W.B.C. 7,100 Polys. 73%

R.B.C. 4,100,000 Hb. 66%

Urine Alb.—one plus; Sugar-negative; Micro.—occasional hyaline cast.

Blood Wassermann—negative.

Frei Test—positive.

Biopsy taken through anoscope showed only chronic inflammation.

Diagnosis.—Rectal stricture of Lymphopathia Venerea.

November 21, 1936, under ether anesthesia, the first stage of a Mixter colostomy was performed. After the peritoneum had been opened, the pelvis was explored, and no reason found to believe the bowel had been injured at the time of the supravaginal hysterectomy. The rectal stenosis extended about 10 cm. above the cul-de-sac, and there was lymph adenopathy along the rectum, extending into the recto-sigmoidal junction.

November 30, 1936, the second stage of the colostomy was done. Primary union of the original incision had taken place in the meantime. The patient's stay in the hospital was characterized by sudden disappearance of rectal pain, increased appetite and general improvement.

The last follow-up visit of this patient was in November, 1937. The colostomy was working very satisfactorily. Her weight was 115 pounds, a gain of thirty-five pounds since the operation. She stated that she had worked on a farm during the summer, and was indeed a grateful patient.

Of course, we can not consider colostomy as a cure for this condition, but I would like to outline the advantages of colostomy in this particular case.

BEFORE COLOSTOMY

1. Constant pain.
2. Continued loss of weight and strength.
3. Toxic.
4. Profuse discharge from rectum.
5. A very objectionable odor about person.
6. Confined to bed.
7. Nausea and vomiting.

8. Secondary infection present and possibilities of perirectal abscesses, amyloid disease, septicemia, peritonitis, and complete intestinal obstruction developing.

AFTER COLOSTOMY

1. Complete relief of pain.
2. Gain of weight and strength.
3. No toxicity.
4. Little or no discharge from rectum.
5. No odor except on rare occasions.
6. Up and about, able to work.
7. Good appetite.
8. Little or no secondary infection and slight possibility of any of these complications developing.

All this is weighed against the usual objections to any colostomy, and as there is no effective medical or surgical treatment, to date, for the advanced stricture itself, I can see but one conclusion.

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PYELITIS—ETIOLOGY AND PATHOLOGY.*

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In recent years through a closer cooperation between the pediatrician and genito-urinary surgeon, it has been learned that, except for the neoplasia of the lower urinary tract, children are subject to the same urologic diseases as adults. Since the introduction of the children's cystoscope in 1907, the study of these diseases has been placed upon the same accurate basis as in adults.

Urologic disease in the young is very common and extremely important, for it is estimated that from 1 to 2 per cent of cases seen in pediatric practice are suffering from it. It is concerned somewhat with the anomalous development of the urinary tract of which I shall speak later.

While it may be possible in the discussion to follow to say something of the many diseases affecting the genito-urinary tract in children, it was thought best to limit the scope of the papers to pyelitis, pyelonephritis and pyonephrosis, for it is this little group that give us the most trouble and compose the common urologic diseases in the young.

The purpose of my paper is to discuss the etiology and pathology of these diseases.

ETIOLOGY

Pyelitis is twice as common in children under two years as after that age, and 75 to 90 per cent of these cases occur in girls. It is uncommon under three months of age but has been seen in the newly born. In very young infants as many boys as girls are affected, but after this period it is three or four times more common in girls. After two years of age the incidence decreases.

The disease may depend upon a renal calculus,

renal tumors, inflammation of the bladder, or suppurative processes in the kidney, or it may follow acute respiratory infections the infectious fevers, or gastro-enteric disturbances especially of a diarrheal nature, or be part of a septicemia. Helmholz and Schwartz have cultured the urine of infants suffering with gastro-intestinal disorders and have found 25 to 30 per cent of them contain colon bacilli, yet no other evidence of infection in the urinary tract. Whether due to diminished resistance or decreased flow of urine due to fever is unknown.

In chronic recurrent pyelitis there is frequently kinking or stricture of the ureter, causing stasis. There may be pressure from an adjacent mass, also causing stasis. An important cause in some cases is stricture of the urethral meatus. These anomalies prevent proper drainage. Neuromuscular dysfunction of the bladder may cause an atony of the ureters, thus creating stasis. Diseased tonsils and teeth may be etiologic factors in recurring pyelitis acting as foci of infection. In many cases, however, especially in young infants, pyelitis appears suddenly without any preceding infection or known causative factor.

The way in which the infection occurs is still an open question, i. e., whether blood borne, or ascending from the urethra or by the anastomosing lymphatics of the intestine and urinary organs, but probably all three routes are possible. The fact that the condition is seen chiefly in the "diaper age", the sex incidence, and the infrequency with which positive blood cultures are obtained all point to an ascending infection. This ascent does not have to occur through the lymphatics, as formerly believed, for a reflux of urine from the bladder up the ureter may occur in normal individuals. However, some cases seem to occur otherwise, as those in which there is a

*Presented as part of a Symposium on Pyelitis at the Post-Graduate Extension Course, Georgetown University, September, 1937.

bacteremia. Helmholtz has induced infections by both routes in experimental animals.

The colon bacillus is the organism found in 60 to 80 per cent or more of cases. Other germs discovered are the streptococci, staphylococci, typhoid bacillus, bacillus pyocyaneus, bacillus lactis aerogenes, bacillus proteus, and the Freidlander bacillus. The gonococcus seldom infects the pelvis of the kidney.

Rarely pus in the urine may result from direct extension of some pathologic process outside the urinary tract, as paravertebral abscess from caries of the spine a perirenal abscess, or an appendix abscess may rupture into the urinary tract.

PATHOLOGY

When a calculus or ureteral stricture causes urinary infection the lesion is usually unilateral and confined to the parts above the calculus or stricture. In other instances the process is diffuse. The amount of cystitis is variable. In infants it is rarely sufficient to give rise to bladder symptoms, but older children are apt to have bladder symptoms due to cystitis.

The chief lesion in the upper urinary passage is said to be pyelitis, which means a catarrhal inflammation of the pelvis and calices with congestion and swelling of the mucous membrane. Minute hemorrhages also may occur. Pathological observations

are notoriously few because patients with pyelitis rarely die. Nearly all autopsies have been done either in cases of long standing pyuria or else acute cases associated with sepsis. In such cases it has been found that pyelonephritis is regularly present in addition to pyelitis. There may be merely collections of polymorphonuclear leucocytes or small abscesses throughout the parenchyma of the kidney.

The infection may die out and healing take place with scar formation. In a small number of cases there has been widespread destruction of parenchymatous tissue. The remaining renal tissue, though adequate for the immediate needs of the child, is not sufficient for his needs for subsequent growth. After a lapse of years symptoms of renal insufficiency appear, which means chronic nephritis, and that is another story.

The term pyonephrosis is usually applied to an extreme condition in which the pelvis and calices of the kidney are greatly distended with pus and in which compression has obliterated most of the renal parenchyma. This is rarely seen except with organic obstructions, and it is the result of a prolonged obstruction with infection. The mucous membrane of the pelvis is extremely altered. The remnants of the parenchyma show marked evidence of infection.

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PYELITIS—SYMPTOMS, DIAGNOSIS, TREATMENT.*

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As far as the symptomatology is concerned, we shall include under the term pyelitis those other concomitant infections which frequently may co-exist, namely, pyelocystitis, pyelonephritis, and occasionally pyelonephrosis. Clinically, it is our custom to diagnose our cases as "acute pyelitis" and "chronic or recurrent pyelitis".

In very few diseases is there such wide variation in the severity of the symptoms as in this one we are discussing today. In many cases the symptoms are so mild that they would be overlooked except for a routine urine examination, while in others they

may be alarming in the extreme. In acute pyelitis the onset is usually sudden, with a high fever ranging from 103 to 106, chills, vomiting, pallor in spite of the high fever, and extreme restlessness and fretfulness. The chill of onset is frequent in older children, but seldom seen under two years of age. The temperature curve shows wide remittent swings, with a gradual return to normal, under effective treatment, within one to two weeks. There may be marked digestive symptoms such as vomiting, anorexia and occasionally diarrhea. It may be difficult to decide whether these are due to the urinary tract or occur as primarily digestive. Nervous symptoms, especially in the very young infant, may be convul-

*Presented as part of a Symposium on Pyelitis at the Post-Graduate Extension Course, Georgetown University, September, 1937.

sions, meningisms, and great prostration. Frequently he appears to be very hypersensitive, crying upon the slightest manipulation. Contrary to most infantile illnesses, he is apparently much more content lying absolutely quiet and untouched. Frequently there is a certain amount of abdominal tenderness, particularly on palpating the kidney region. Older children may locate the pain themselves over one or both kidneys. In very young infants, when he is held over the mother's shoulder with the back to the examiner, a definite pain reaction may be obtained on firm palpation over the infected kidney. Bladder symptoms are common in all ages, especially frequency and dysuria, the severity depending on the amount of pus passed in the urine.

Pus is quite variable in quantity, ranging from such a large amount as to cause temporary obstruction of the ureter with consequent ureteral colic, to almost total absence of pus in the urine for a few days. Frequently the high fever may be sustained for several days, during which time the urine examinations are negative for pus, when quite suddenly the temperature drops to normal and the next specimen will show a great shower of pus cells. Clumping is commonly found, especially in centrifuged or gravity specimens. If nephritis is co-existent, albumen and various types of casts occur; as also red blood cells, occasionally sufficient to produce a hematuria. Epithelial cells from all parts of the urinary tract may be present, and the most frequent causative bacteria, namely, the colon bacillus, is usually found in a catheterized specimen. A leucocytosis of from ten to twenty-five thousand is present in most cases. In spite of the extreme pallor at onset, a secondary anemia is uncommon except in the chronic or recurrent type. Microscopic pus and a bacteriuria may be found many days after the fever has declined to normal.

In a differential diagnosis of the acute form, the following conditions must be ruled out, namely, appendicitis, influenza, pharyngitis, typhoid fever, pneumonia, diaphragmatic pleurisy or "devil's grippe", malaria, and other conditions in which the predominant symptom is fever alone. In our experience, perhaps the most frequent similar symptom-producing disease and the most difficult to differentiate is that syndrome known as "exanthem subitum", or perhaps better called "Zahorsky's measles". This disease, which is characterized by a high fever, prostration, irritability, anorexia, leucopenia,

and occasional gastro-intestinal symptoms, is not often diagnosed until the characteristic rash appears at the end of the fourth day. Pyelitis is often suspected, but can be eliminated by the leucocytosis and the finding of pus in the urine. The other conditions mentioned may be ruled out by their characteristic physical and laboratory findings, always, however, bearing in mind that a pyelitis may suddenly show up as a secondary complication to many other conditions. Often a child may seem surprisingly well and still run a temperature of 103 to 105. If fever of either high or low grade persists without any demonstrable reason, we should not overlook urinary infection. In the last analysis pyuria must be demonstrated in infections of the urinary tract, and once its presence is established, an endeavor should be made to locate its source.

The pediatrician is at a loss to make a diagnosis until an examination of the urine is obtained. This examination must be absolutely accurate and thorough. It is not enough to ask the mother to submit a single specimen of urine in a suspected case. How often we see a diagnosis of pyelitis made upon the finding of pus in the urine, only to discover that the infant has a simple leucorrhea, secondary to some other cause. The examination should be made either of a twenty-four hour specimen or of staggered specimens passed at different times of the day or better still catheterized specimens. This latter procedure being extremely difficult in non-expert hands in young infants, it is at least feasible to have the mother bathe the vulvo-vaginal region thoroughly before the specimen is passed. In very young infants it is possible to obtain a satisfactory specimen for examination by placing a wad of sterile cotton in the diaper, and expressing the urine thus obtained into a clean container. A positive final diagnosis should never be based on a single specimen examination. It is frequently a mistake to withhold a diagnosis of pyelitis because there is no "clumping" of pus cells present. While clumping is almost a sure sign of pus, many specimens in an acute attack will nevertheless show a great flood or shower of pus cells with very little clumping. Most authorities agree that the presence of ten or more pus cells in the low power field of a catheterized specimen, whether or not there is clumping, is indicative of pyuria. Local conditions which contaminate the urine, such as vulvo-vaginitis and balanitis in the male infant, can only be ruled out

by catheterization or thorough cleansing of the parts before urination. It should also be remembered that pus cells degenerate quite rapidly in urines that are left standing; hence the specimen should be examined as early as possible.

In the chronic or recurrent type of pyelitis we have an even more varied symptomatology. The mother tells us the child has never been well since an attack of "stomach trouble with fever" many months back. He is subject to similar spells at frequent intervals, he is under-weight, will not eat, restless at night, has vague rises of temperature, occasional headaches, bed-wetting and is very irritable around the house and unfriendly with his playmates. He has a secondary anemia and frequently the pale, sallow complexion which has been dubbed "pyelitis pallor". Intensive examinations show no demonstrable cause for it all until we find, if we are lucky, after frequent persevering urinary examinations, a pyuria. The very next specimen may be absolutely free from pus. These cases are difficult; they must be differentiated from nutritional disorders due to dietary and hygienic errors and from chronic diseases such as tubercular infections, etc. This form of pyelitis has been known to drag along through years, even into adult life. Here again we find a diagnosis can only be made by elimination and the finding of pus in the urine.

TREATMENT

In the acute form, rest in bed is essential and should be enforced. The patient may be allowed to sit up in bed to facilitate drainage of pus. The disease seems almost self-limited in some cases, the patient recovering and the urine becoming free from pus in two to three weeks under simple dietetic and hydro-therapeutic measures. The diet should be fluids, and water especially should be forced. In severe cases where vomiting and dehydration are present one should not hesitate to give fluids parenterally. Daily bowel evacuation is desirable. Where free drainage into and out of the urinary tract is present, excellent results have been obtained by the use of urinary antiseptics and alkalis. Clinical experience has proved that hexamethylenamin in intensive doses as high as sixty to eighty grains per day is beneficial. This is given for a period of one week to the point of tolerance, followed by a rest period, and then repeated another week. If gastric or bladder symptoms develop the drug is discontinued for a few days and then resumed in smaller

doses. During this period of treatment, the urine must be kept acid by the use of ammonium chloride or acid sodium phosphate in sufficient doses.

Alkalinization of the urine also has given good results in many hands. Potassium citrate, or, better still, sodium bicarbonate, is given in sufficient doses to keep the urine alkaline to litmus paper constantly for a period of at least seven days. To do this it may be necessary to give the bicarbonate in doses of 120 grains in twenty-four hours to a child two years of age. If necessary, the mother should be taught to test the urine with litmus paper at frequent intervals during this period. A note of warning should be sounded as to the possible results of too prolonged alkalinization. We have occasionally seen a pyelitis develop into a more or less chronic alkaline cystitis. We have also seen several cases of an alarming alkalosis result from a too zealous use of this treatment. Up to the present time we have not been impressed with the results obtained from the use of hexylresorcinol in its various forms.

More recently, favorable reports as to the use of mandelic acid are beginning to filter in, but, so far, sufficiently good clinical results in children have not been obtained to justify its widespread acceptance owing to the difficulty of its administration to young children. In the form of sodium mandelate it is given to a child six years old in fifteen grain doses five times a day together with an acidifying drug such as ammonium chloride. Drastic restriction of fluids during the period of treatment is necessary, which would seem to contraindicate its use in young children. It is also contraindicated if albumen and casts are present, which would seem to rule out its use in a co-existing pyelonephritis. The fact also that a rather severe Ketogenic diet is necessary to its proper use makes it a measure of doubtful advisability in older children whose nutritional level is already at a low stage.

A more promising drug which yet awaits any extensive clinical trial is sulfanilamide. Such reports as we have together with our own experience have been favorable enough to warrant its more frequent application. A quite recent resumé of his results with this drug in pyelitis has been made by Helmholtz of the Mayo Clinic. He advises the following safe, maximum dosage per twenty-four hours: Infants seven and one-half grains; children two to three years of age fifteen grains; four to six years twenty-two grains; six to twelve years thirty

grains. After four or five days the dosage should be reduced by one-half. His summary is impressive:

"Sulfanilamide on administration produces a urine that is strongly bactericidal for most of the organisms which cause infection of the urinary tract. The dosage which is necessary to produce bactericidal urine is considerably less than doses which have been given without any ill-effects, for infections with streptococci. Its ease of administration, its use in the acute stage of the disease, its action in an alkaline urine, and its successful use in cases of renal insufficiency, make it a drug of great usefulness in the treatment of acute and chronic infections of the urinary tract. It takes the place of other urinary antiseptics in its successful application to certain types of cases in which other substances have failed, but because of its lack of action on the streptococcus faecalis, it cannot replace them entirely."

Here, again, we would sound a note of warning as to the dangers of this drug in pediatrics, not only in this disease but in other infections where its use may be deemed advantageous. We have seen young children completely "knocked out," showing evidences of great prostration, headache, loss of reflexes, discoloration of skin, low blood pressure and severe gastric disturbances. We saw one case in consultation where the drug had been given for a streptococcal pharyngitis with glandular involvement, and on the second day of administration we escaped making a diagnosis of poliomyelitis only by withholding the drug for two days and seeing the symptoms vanish.

The treatment of the recurrent type pre-supposes a complete urological examination together with the elimination of a possible hematogenous origin due to diseased foci. In the great majority of cases investigation will show some obstruction or anomaly along the urinary tract with consequent urinary stasis as the cause of persistent pyuria. Cystoscopy, catheterization of the ureters, pyelography, etc., may be necessary to reveal such conditions. Removing diseased tonsils, clearing up of infected sinuses, regulation of dietary habits and correction of hygienic errors, have cured many cases of stubborn pyelitis. A case resisting medical therapy for more than four weeks should invite the assistance of the urologist.

In closing, we would cite the case of a child six years old with recurrent pyelitis of some nine months' duration. Urologic and X-ray examinations finally led to inoculation of a guinea pig with material obtained from the suspected kidney. In one week the guinea pig died of tuberculous peritonitis. The parents refused to accept the advice of counsel that the kidney should be removed and gleanings from the same kidney were injected into another guinea pig in another laboratory. After four weeks the pathologist reported that the said guinea pig was the healthiest he had in the shop. The patient at present is twenty-one years old and is a very robust and normal young woman, enjoying the use of both her kidneys.

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SULFANILAMIDE—ITS USES AND DANGERS.*

F. MUSGRAVE HOWELL, M.D.,
Hopewell, Virginia.

Following the experimental work of Domagk, published in 1936, numerous reports now testify to the efficacy of sulfanilamide in the treatment of infections with Beta hemolytic streptococcus.

Particularly striking are the reports on meningitis and puerperal infections of this type. Favorable reports have also been issued on its use in meningococcus meningitis, infections with the gonococcus and in type III pneumonia. The drug has also been used

with apparent benefit in case of erysipelas and severe cellulitis, and also in gas bacillus infection. Many have found the drug effective in the treatment of infections of the urinary tract, with the exception of streptococcus faecalis.

The mortality rate in hemolytic streptococcus meningitis, of which ear infection is most commonly the cause, has been estimated as high as 95 per cent, but with the use of this treatment seven recoveries in eight cases have been reported. In most of these reports prontosil solution or sulfanilamide solution

*Read before the Fourth District Medical Society at Hopewell, Va., February 15, 1938.

has been used intra-spinally in addition to oral administration.

Colebrook and Kenny reported results from the use of prontosil at Queen Charlotte's Lying-in Hospital in London. Two consecutive years, in the second of which prontosil was used as a routine, showed an abrupt drop from a mortality of 20 per cent to 4.5 per cent and a marked reduction in the duration of illness. They attribute results to a diminution of the invasive powers of the streptococcus, with less tendency to penetrate from the birth canal to the peritoneum or blood stream. However, the North Western Isolation Hospital, in the same city, had also had a progressive drop in mortality in cases of this type for several years around this time without the use of sulfanilamide therapy. The writers feel that variation in virulence has to be taken into account when estimating results.

In infections of the urinary tract sulfanilamide has the advantage that it is effective in both alkaline and acid urine, more so in the former.

Methenamine and mandelic acid both may cause hematuria and mandelic acid therapy necessitates the maintenance of an acid urine, which may be difficult or impossible.

The use of sulfanilamide in gonorrhea has developed within the last year, and several reports have been issued on its routine use in clinics, in both acute and chronic cases. Results have been very satisfactory, as high as eighty to 90 per cent cures in some reports, and benefits have been marked in complications, such as arthritis.

Whether the drug should be used alone or combined with local treatment remains to be determined. There may be a tendency to discontinue treatment on apparent cure, and also a difficulty in keeping the patient under observation.

Sulfanilamide is not a drug for self-treatment and the patient should be seen every three or four days.

In Glasgow the drug has been tested in a series of cases of erysipelas and the results compared with those from ultra-violet therapy.

Sulfanilamide is the official name adopted by the Council on Pharmacy for para-amino-benzene-sulfonamide. The drug was originally introduced as prontosil and many other proprietary names have been applied. Several allied substances have been used in the treatment of these infections but it appears that sulfanilamide is the effective agent and

that the other allied chemicals are converted to this form within the body.

Sulfanilamide is readily absorbed when taken orally and in the majority of cases nothing is gained by parenteral administration unless some condition, such as vomiting, renders the oral route impossible. Subcutaneous injection has been used and also intraspinal and intramuscular.

In meningitis the best method is undetermined and the intraspinal route may be necessary.

Sulfanilamide is sparingly soluble in water, 0.5 per cent at 37°C. Solutions for injection are prepared with the powder by the addition to normal saline near the boiling (90°C.) point. The solution is then cooled to 37°C. for administration.

This solution crystallizes readily and no ampules are available.

Prontosil, the di-sodium salt of an allied chemical, (2.5 per cent) is available in ampules, and has been used by many, but stability is probably the only advantage and the solution is more irritant. This preparation corresponds to the prontosil soluble of Europe.

It has been estimated that complete absorption is obtained by the oral route in about four hours, the drug being widely distributed by the blood to the tissues. Concentrations, but little lower than in the blood, have been found in spinal fluid, pleural and peritoneal effusions and prostatic secretion.

It is believed that a blood level of about 10 mgs. per cent should be maintained for effective action.

The drug is eliminated through the urine within twenty-four hours after administration is discontinued. The most advantageous dosage cannot be considered fully determined. Long has found 1 gm. for twenty pounds of body-weight every twenty-four hours, tolerated for one month. The dose should be distributed to maintain a constant level and the following is suggested for severe infections:

5 gms. in twenty-four hours, in six doses at four-hour intervals. On improvement, this should be reduced to 4 gms. in twenty-four hours—four doses. 3 gms. in twenty-four hours may be continued for three to four weeks.

For children Helmholtz uses: Infants, 0.3 gm. daily; two-three years, 0.5-1.0 gm. daily; four-six years, 1.0-1.5 gm. daily; twelve-fifteen, 1.5-2.0 gm. daily.

Subcutaneous:

Sulfanilamide in solution 1.6 gms. at eight-hour intervals.

Prontosil seems to give results with less quantity.

It is necessary to continue the drug for some time after apparent recovery.

Intraspinaly:

Sulfanilamide solution (0.8 per cent) in normal saline is administered.

Prontosil solution has been used by many but it is said to be more irritant.

5 cc. less than the amount of spinal fluid withdrawn is injected, and as much as 60 cc. in twenty-four hours has been given by this route.

At present it is well when using sulfanilamide to give no other drug, with the exception of sodium bicarbonate. Sulphates are particularly to be avoided.

The mode of action of sulfanilamide is far from clear.

Reports on its bactericidal properties are variable. Osgood has recently reported his studies of the action of the drug on the streptococcus in cultures of human marrow, and concludes that the major action is neutralization of toxins, analogous to the action of an antitoxin.

He found that concentrations of 1-1000 did not kill the streptococci, but did cause a decrease in the rate of division.

The drug appeared to have no direct toxic effect on the nucleated cells of the majority of bloods and marrows. He also found considerably weaker concentrations than those used clinically appeared to have equal effect.

Bigler has conducted a clinical study on the effects of sulfanilamide on the Leucocytes in various types of infection and in cases without infection; in no case did any increase in the leucocyte count result, or in the percentage of polys. In two cases a leucopenia resulted, and at the end of the infection a rapid fall in the leucocytes was observed.

Taking into account the extensive use of the drug, it would seem to have a wide margin of safety. However, numerous toxic effects of the drug have been reported. Mild reactions include headache, anorexia, nausea, vertigo and acidosis. Cyanosis frequently develops; in three-fourths of the cases observed by Long and Bliss, methemoglobinemia and sulph-hemoglobinemia may develop.

George Discombe has reported several cases of marked cyanosis developing under treatment with this drug at St. Bartholomew's Hospital. Of seven cases, five had been given frequent doses of magnesium sulphate and a sixth had wet dressings of this salt applied to a large gangrenous area. He considers the condition not serious, though alarming, provided the drug is stopped. However, he points out that, if the hemoglobin is already very low (30 per cent), active hemoglobin may be fixed to a dangerous extent without cyanosis developing, and that merely watching for cyanosis is not a sufficient precaution. He advises hemoglobin determination at the onset of treatment and every fourth day.

Severe toxic effects occur occasionally, and apparently constitute individual idiosyncrasy to the drug. Two fatal cases of granulocytopenia have been reported recently, developing under treatment for a chronic penile ulcer in the one case, for acute gonorrhea in the other. Red and white blood cells should be examined periodically during the course of treatment.

The deaths which resulted from the administration of elixir of sulfanilamide, Massengill, were attributed, after thorough investigation, to the effects of diethylene glycol, used as a solvent in this preparation.

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SERUM TREATMENT OF PNEUMONIA.*

C. P. JONES, JR., M.D.,
Newport News, Virginia.

Today I shall endeavor to bring to your attention the current trends in the treatment of pneumonia by specific serum. The average practitioner sees twelve to fifteen cases per year—enough to warrant attention from each and every one. I shall not go into the diagnosis or physical signs or even the necessary auxiliary medical care but shall discuss one specific measure.

Pneumonia, today, for some unexplained reason, is on the increase. In 1933, according to statistics of the Metropolitan Life Insurance Co., the death rate was 62.5 per 100,000, in 1936, it had risen to 69.8 per 100,000. In Virginia we have yearly 182 cases per 100,000, and in North Carolina 186 cases per 100,000. Pneumonia out-ranks any other infectious disease as the cause of death to our population.

| CAUSES OF DEATH PER 100,000—1936 | |
|----------------------------------|------|
| Pneumonia ----- | 69.8 |
| Tuberculosis ----- | 54.2 |
| Influenza ----- | 14.6 |
| Lues ----- | 11.6 |

Pneumonia is more fatal to negro males than white males, and more fatal to negro females than to white females. In regard to age incidence, 75 per cent of pneumonia occurs below the age of sixty-five years.

In 1913, Cole brought forth the first specific serum for type I pneumonia. This was an unconcentrated horse serum, several hundred cc. per dose being necessary. Felton, in 1924, produced a refined anti-pneumococcic serum which was ten-fold more concentrated than Cole's original serum. Since 1924, further advances have been made, until today we have a highly refined and concentrated product.

Today the administration of the serum is not a whim of the doctor but a direct obligation which he owes the patient, who intrusts his life and welfare in the doctor's hands. Administration of the serum is for the young and old, weak and strong. *It is not limited to specific cases* depending entirely on the clinical picture, for we all know how the course can change in only a few hours.

*Read before the Seaboard Medical Association of Virginia and North Carolina, at Virginia Beach, Va., December 7-9, 1937.

Every patient should be typed early. The earlier the administration of serum the better the results, the less amount of serum required, and the quicker the recovery. Routine administration of serum may sound unnecessary and extravagant, but statistics show the necessity of early and universal administration. Some clinicians argue that every patient is not appreciably benefited from routine administration of serum to warrant the expense. But, how may we prognosticate better the course of a patient who has had serum in comparison to one who has not, than to review the controls (non-serum) in comparison to the serum treated cases.

When we make the statement that proper serum treatment saves lives, let us take some statistics for type I:

| | Mortality |
|--|-----------|
| In non-serum cases there is a----- | 25 % |
| Cases treated with serum on the fifth day or later | 18.4% |
| Cases treated before the fifth day----- | 8.8% |
| Cases treated on the first day----- | 5.0% |

To reduce mortality from 25 per cent to 5 per cent is a result that pleases us all. I wish to emphasize that the earlier the serum is given the better are the results obtained. Further statistics that go to prove this point are as follows:

IN NEW YORK (EXCLUSIVE OF NEW YORK CITY)
January, 1936—August, 1937

| TYPE I | | |
|-------------------------------------|-------|-----------|
| | Cases | Mortality |
| Serum given before fifth day----- | 1,163 | 13.8% |
| Serum given fifth day or later----- | 432 | 25.9% |
| | 1,595 | 17.1% |

Results of the Connecticut Pneumonia Control Program and the Control Programs of Maine and Massachusetts further verifies the above figures.

IN CONNECTICUT
1930-1936 (the majority being treated in 1935-1936)

| TYPE I | | |
|---------------------------------------|-------|-----------|
| | Cases | Mortality |
| Serum given before the fifth day----- | 200 | 11.0% |
| Serum given fifth day or later----- | 39 | 46.2% |
| | 239 | 16.7% |

| TYPE II | | | |
|----------------------------------|-------|-------|--|
| Serum given before the fifth day | 50 | 16.0% | |
| Serum given fifth day or later | 13 | 38.5% | |
| | 63 | 20.6% | |
| IN MAINE | | | |
| JANUARY, 1936—AUGUST, 1937 | | | |
| TYPE I | | | |
| Serum given before fifth day | 72 | 5.5% | |
| Serum given fifth day or later | 7 | 71.4% | |
| Onset not determined | 14 | 14.3% | |
| | 93 | 11.6% | |
| TYPE II | | | |
| Serum given before fifth day | 25 | 4.0% | |
| Serum given fifth day or later | 3 | 33.3% | |
| Onset not determined | 7 | 38.6% | |
| | 35 | 11.5% | |
| IN MASSACHUSETTS | | | |
| January, 1931—June, 1937 | | | |
| TYPE I | | | |
| Serum given before fifth day | 1,014 | 14.1% | |
| Serum given fifth day or later | 141 | 28.4% | |
| | 1,155 | 15.8% | |
| TYPE II | | | |
| Serum given before fifth day | 272 | 22.1% | |
| Serum given fifth day or later | 40 | 37.5% | |
| | 312 | 24.0% | |

Bullowa reports from his series at Harlem Hospital, on Type I, that the percentage of fatality was:

| | Non-serum | Serum |
|-----------------------------------|-----------|-------|
| Bacteremic patients | 83.3% | 43.3% |
| Non-bacteremic patients (control) | 17.0% | 6.5% |

(No statistics as to the day the serum was given.)

The bacterial flora causing pneumonia shows in the 2000 cases studied of lobar pneumonia the following percentage of incidence:

| | |
|---------------------------|--------|
| Pneumococcus | 95.65% |
| Strep. Hem. | 3.8 % |
| Pneu. Bac. of Friedländer | .4 % |
| Strep. Aureus | .1 % |
| Hem. Influenza | .03% |

The classification of the types of pneumonia in percentage, as given by Jerome Natt, M. D., of Roanoke, Va., is as follows:

| Type | Lobar | Broncho |
|------|-------|---------|
| I | 35% | 5% |
| II | 25% | 5% |
| III | 10% | 90% |
| V | 7.5% | |
| VII | 8% | |
| VIII | 8% | |

Statistics showing the effect of serum on the different types of lobar pneumonia:

| PERCENTAGE OF MORTALITY | | |
|-------------------------|-----------|-------|
| Type | Non-Serum | Serum |
| I | 30% | 10% |
| II | 45% | 25% |
| III | 50% | — |
| IV | 20% | 8% |
| V | 20% | 7% |
| VI | 16% | 5% |
| VII | 17% | 7% |
| VIII | 15% | 10% |
| XIV | 17% | 7% |
| Remainder | 20% | 20% |
| | 30% | 18% |

It is estimated that there will be in a fiscal year 89,000 cases of type I and type II pneumonia; without serum 32,000 will die; with serum 14,000 will die—a saving of approximately 18,000 lives in types I and II alone. Lobar pneumonia in adults is nearly always due to the pneumococcus, of which 77 per cent, or about 150,000 cases, in the United States annually may be serum treated. In broncho-pneumonia of adults, according to Dr. Finland (Boston City Hospital), about half are pneumococcus pneumonias, of which 40 per cent or about 25,000 cases, annually may be serum treated—with a saving of 31,500 lives in both groups which are now needlessly lost. Dr. R. L. Cecil believes that the death rate is cut approximately one-sixth the standard death rate of type I pneumonia with serum, in first day administration.

Before the serum may be given, one must type the patient. This is carried out by one of two methods—the mouse method, or the Neufeld method.

The Mouse Method: One-half cc. of sputum, which has been washed in physiological saline, is injected into the peritoneal cavity of a mouse. After a period of twelve hours the peritoneal exudate is agglutinated against known type of anti-serum.

The Neufeld Method: This method can be carried out immediately in the doctor's office, and the results read immediately after a period of ten minutes. Rabbit anti-pneumococcic serum and methylene blue are contained in a capillary tube that comes prepared ready for use. The serum and stain are added to a loop full of washed sputum. This is examined on a glass slide under a cover slip. It is best to examine this slide under oil emersion lens. A swelling of the capsule is diagnostic. By beginning with a known anti-pneumococci rabbit serum one can, with rapid elimination, arrive at the specific type.

Statistics go to prove definitely the benefit of using serum in treating pneumonia. Every day the pharmaceutical houses are giving us a more potent, highly concentrated serum, as free as is possible up to the present time of any untoward effects. However, in the administration of any serum we must not go blindly along and fail to consider the allergic component of our patient. A severe serum reaction *per se* can be fatal immediately, or a few hours or days later from its devitalizing effect.

After the patient has been typed, a detailed and careful history must be taken as to the sensitivity to horse serum, allergy to horses, fur, foods, or any strange unexplained attacks of asthma, or hayfever that may be due to an allergy. If the patient is too ill, the same history, as near as is humanly possible, should be obtained from the nearest relative or responsible party having the information. If one's findings are negative, then it is safe to proceed to the conjunctival test. This test is more sensitive than the skin test. On several occasions it has been noted by various authors that there is an absolutely negative skin reaction but quite a positive conjunctival reaction. The conjunctival test is made with the dilution of 1-10 horse serum. If for any reason the history causes suspicion, I would advise the use of smaller doses. After a negative conjunctival test, wait for a period of ten minutes and then proceed with the skin test. The procedure here is the same that is used in making any skin test.

Pneumonia serum is best given intravenously, and it is for this reason that careful testing for susceptibility must be done. Any sign of sensitivity along the procedure is a definite indication to postpone further treatment until desensitization of the patient may be carried out by multiple small doses. One should have on hand for immediate use an ampule of 1-5000 solution of adrenalin chloride—to be used at the first sign of anti-prophylactic shock. It would be advisable, in the administration of the serum, if there is for any reason a definite appearance of sensitivity, or in cases of recently desensitized patients, or even cases of patients who have had a recent foreign body injection, to give the first dose intramuscularly in an extremity so that delayed absorption may be obtained by the use of a tourniquet.

Some authors prefer to give the initial dose, in cases of no unfavorable reaction, in divided doses, i. e., 5 cc. for the first injection, followed in two

hours with the remainder of the dose. Personally, I dilute the serum by starting an intravenous with normal saline, sponging off the tubing of the intravenous set, and injecting the serum into this. In this way, I have greater dilution and a slower intravenous administration. About 20,000 units is considered a sufficient dose for one treatment. The serum should be repeated every four hours until signs and symptoms indicate a termination of the procedure. An intravenous injection is like a spinal anesthetic: it cannot be withdrawn. The type of serum to be used is determined by typing.

The leucocyte count, blood culture, X-ray picture, temperature and general systemic reaction and response determine the continuation or discontinuation of the serum. In regard to the leucocytic count, under 10,000 and above 30,000 will warrant continuation of the serum. In the hospital daily blood counts are advisable. A positive blood culture in the face of an overwhelming toxicity warrants continuation of the serum. The absence of agglutinins as well as large areas involved in the lung field, as shown by X-ray examination, warrants the continuation of the serum. The drop of the temperature to normal, a fall in the pulse rate of the patient, and an improvement in the general condition is the only clinical picture that the country practitioner has at hand.

There are two methods of serum dosage administration: First, the multiple unit dose, which consists of 20,000 units every four hours. Second, the single average dose of 100,000 units within two hours. In cases of bacteremia, according to Finland, the dose may run as high as 300,000 to 500,000 units, or such doses as one finds necessary to clear the blood stream of a positive culture.

What may be expected in the general condition of the patient and in the lung field after the administration of the serum? The serum in sufficient doses first of all reduces the mortality, clears the blood stream, lessens the toxicity, hinders the development of complications, and reduces the number of days of illness by three to four days. Only on rare occasions do we see an extension to other lobes and this can be taken care of by further administration of the serum in the majority of cases.

In the affected portions of the lung resolution is hastened. However, in the cases in which the disease has progressed to hepatization of the lung, with or without serum, there is no increase in clearing up

of the lung field, as this process depends upon the natural reparative processes of the body.

I shall report one case which I believe to be typical of the results that one may obtain from serum administration in the home. The patient lived three miles off the main highway, ten miles from my office. He was sixty miles from Charlottesville and forty miles from Clifton Forge.

Case: Mr. E.T., white male, age nineteen years, good nutrition, past history negative. On April 10, 1937, when I was called to see the patient for the first time, he was complaining of generalized pain and aching with headache. Physical examination at the time revealed no definite pathology, and a tentative diagnosis of influenza was made. I ordered him to bed, gave some influenza capsules, and instructed him to force fluids. On the next day, the eleventh, a recheck of his lung field still showed no pathology or any signs of developing pneumonia. Monday, the twelfth, at 9:00 P. M., the family phoned me that the patient was spitting blood. A diagnosis of pneumonia was made at this time. Examination revealed rales and beginning consolidation in the lower left chest, and a temperature of 101.5. At 11:00 A. M. the next day he had numerous consolidated areas of both lower lobes, was quite toxic and delirious, and had a respiration in the high thirties. In general, the picture gave a poor outlook for so early in the case. His toxic condition was the most alarming feature. We sent some sputum to Charlottesville by fast auto and had it typed, procured the serum from the University of Virginia, and started the administration at 8:00 P. M. the same day. This case was type I pneumonia. At the time of the administration the temperature was 104.3, respiration 30, pulse 120. The serum was repeated every four hours. The dosage used in this case was 20,000 units at a time, three doses being given, totaling 60,000 units in all. (We were only able to obtain 60,000 units). At twelve midnight of the fifteenth the temperature was 98, respiration 18, and pulse 80. On the sixteenth, for one reading, the temperature went as high as 100.4 and on the two subsequent readings in the evening it went as high as 99. After the twentieth the temperature remained normal. In about ten days from the beginning of the illness the lung field cleared to approximately normal and the patient made an uneventful recovery.

The serum produced an artificial crisis in this

case, reduced the toxicity, cleansed the blood stream and prevented further extension of the process. I cite this case to show our almost unsurmountable difficulties in obtaining serum, having to send sixty miles for it and thirty-five miles for nurses, all of which had to be accomplished in a period of a few hours. I believe this to be typical in country practice. The serum, I firmly believe, saved this boy's life. We all will have like cases, and we all can have the chance of obtaining such favorable results. Our paths would be made easier if our State Department of Health had typing stations where it would be a matter of an hour or two by automobile to obtain the serum and typing service.

The State of Virginia has recently taken steps to organize a pneumonia control program, and an attempt will be made to get an appropriation from the Legislature this coming session.

The general supporting treatment for pneumonia has remained practically the same for half a century. The advent of serum makes it the primary-immediate treatment, which should be considered as of equal importance to a surgical emergency.

SUMMARY AND CONCLUSION

1. Serum has been developed and is commercially available for types I, II, IV, V, VI, VII, XIV pneumonia. The fatality in pneumonia has been reduced from the general average of 30 per cent to 18 per cent. These figures include type III pneumonia, of which the fatality is over 50 per cent, and the higher types for which we have no commercial serum.

2. 31,500 lives a year may be saved with adequate serum treatment.

3. The serum, besides reducing mortality, brings on an early artificial crisis, clears the blood stream, reduces toxicity, inhibits further extension and complications, and reduces the period of illness from three to four days.

4. Serum administration during the first twenty-four hours is the optimum time. The best therapeutic effects result, decreasing by a multiple each twenty-four hour delay. By universal early typing and early administration, we can save a further large percentage of cases who die under serum treatment because of delayed administration.

5. With greater facilities for typing stations and available serum, it will become the direct obligation on the part of the physician to type all of his pneumonia patients.

Since reading this paper, further advances have been made in the preparation of serum. We may reasonably expect serum for all types, including type III, within the next six months. Extensive experiments are being carried on now with an attempt to replace horse serum with rabbit serum.

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3117 West Avenue.

TREATMENT OF ABORTION.*

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The fact that there are over 600,000 abortions annually in this country¹ and that one out of four pregnancies ends in abortion² means that almost every physician sees at least one case of abortion during each year. This alone is sufficient reason to bring up the subject of the treatment of abortion but when one considers that approximately 10,000 of these cases end in death yearly³, it is mandatory that every physician keep abreast of the times upon such an important subject.

Before the details of the treatment of abortion are considered, it is advisable to bring to your attention the generally accepted classification of abortion, in order that there may be no misunderstanding in regard to definitions.

The word abortion means the detachment or expulsion of the previable ovum and is synonymous with the term miscarriage. In the pathological classification, threatened abortion is placed first, and in this type there is a partial separation of the placenta from its attachment to the uterine wall. Its symptomatology includes vaginal bleeding and cramp-like lower abdominal pains, associated with uterine contractions. If these symptoms continue and become more pronounced, and if, upon pelvic examination, the cervix of the uterus is found to be dilated, the threatened abortion is then considered inevitable until any part of the foetus, placenta or membranes

is passed when the term incomplete abortion is applied. If the uterus expels its contents, the abortion is known as complete⁴. If the foetus dies and the ovisac is retained for a variable length of time, the condition is known as missed abortion. This type of abortion is so rare that its treatment will not be discussed⁵. Also, since there is so much controversy concerning the subject, the treatment of habitual abortion is omitted.

In addition to the above pathological classification, abortions are also classified as to etiology, and an abortion is called spontaneous if occurring without apparent cause. If, however, the abortion is brought on by external trauma, by medication or by intra-uterine manipulation, it is known as an induced abortion. An induced abortion is therapeutic if done in order to preserve the life or health of the mother, but it is known as a criminal abortion if self-induced or if it is brought on without therapeutic justification.

Abortions are also classified by their post-abortal course, and if the convalescence is without fever, the abortion is called afebrile. If, on the other hand, the patient has a temperature elevation, the abortion is termed infected or septic.

In discussing the treatment of the foregoing conditions, there is almost complete unanimity of opinion upon the treatment of threatened abortion and it is as follows:

After a gentle pelvic examination is made to con-

*Read before the Seaboard Medical Association of Virginia and North Carolina at Virginia Beach, Va., December 7, 1937.

firm the diagnosis, the patient is placed in bed and given a soft diet. Rest, physical and mental, is insured by the use of adequate amounts of morphine or codeine. The use of any cathartic is forbidden, though low enemata and mineral oil may be given if necessary. After the original pelvic examination, no more are made unless a change in the condition of the patient warrants re-examination. The patient is kept in bed until all symptoms have been absent for at least four days. She is then allowed up, and if vaginal bleeding does not recur, she may cautiously resume her ordinary activities.

In the fortunate case, there is no recurrence of symptoms, and the pregnancy proceeds normally. The most usual occurrence, however, is that the bleeding and cramps continue and the cervix becomes dilated and the abortion becomes inevitable. The plan of attack then changes, and every effort is made to hasten the evacuation of the uterus. This may be accomplished by the intramuscular use of pituitrin and by the oral or intravenous use of a suitable ergot preparation. This medication is usually sufficient to cause completion of the abortion, but if hemorrhage becomes alarming, the uterus must be emptied surgically under aseptic conditions without delay. It may be necessary to pack the vagina if circumstances do not permit surgical evacuation. Plain sterile gauze should be introduced into the vagina under aseptic conditions in a quantity sufficient to control bleeding, and should be removed within twenty-four hours.

A similar plan of treatment is followed in the uncomplicated or afebrile cases of incomplete abortion. That is, the patient is placed in bed in semi-Fowler position and given oxytocic drugs, unless excessive bleeding occurs, when the uterus is evacuated surgically after it is certain that no infection is present. If there is no hemorrhage, the uterus may or may not be emptied surgically according to the condition of the patient. In either case, if there is no bleeding after five days, it is permissible to allow the patient up, and she may be discharged shortly thereafter.

Since the terms spontaneous and induced are applied to abortions only to denote their etiology, there is no need to mention specific forms of treatment in these types. It should always be borne in mind, however, that all cases of criminally induced abortion are considered septic and are treated as such until proven otherwise. It is also worth while to note that a patient may be febrile, or afebrile, with any

of the foregoing types of abortion, but any patient with an abortion who has chills and fever, or fever alone, is considered to be septic and the treatment is that of septic abortion.

In cases of septic abortion, there is some difference of opinion as to whether active treatment is preferable to expectant treatment. The question is not whether radical or conservative measures should be employed, but the problem is when to be conservative and when to be radical. In order to decide which course is proper no set rule should be followed, but each case of abortion should be individualized so that the patient may receive the proper care.

If it is necessary to define septic abortion—first, are included all criminally induced abortions; secondly, any abortion followed by a chill, and, thirdly, any abortion with which the patient has a fever. The following routine is customary when a patient is seen who is suspected of having a septic abortion. An adequate history is taken, special effort being made to ascertain the etiology of the abortion, and then a physical examination is made. Following this, the patient is prepared for pelvic examination by shaving the pubic hair, and scrubbing the external genitalia and surrounding skin with tincture of green soap and sterile water, followed by a one-half of 1 per cent lysol solution. The examiner then scrubs his hands thoroughly and dons sterile gloves, and makes a gentle bimanual pelvic examination. It is important that during the examination the amount and character of uterine drainage should be noted, as well as the size of the fundus of the uterus, thickening of the adnexae and dilatation of the cervical os. If the retained secundines are lying in the vagina or if they can be seen in a widely dilated cervical canal, it is best to remove these tissues immediately with placental forceps. It is strictly forbidden to curet or examine the interior of an infected uterus⁶, and if the uterine cervix is not dilated, the treatment differs from the foregoing outline and is considered below.

In those cases, in which there is definite evidence of infection, as shown by history of instrumentation, by chill, by fever, or by palpation of an adnexal mass, and if the cervical os is found to be undilated, and if hemorrhage is slight, the following routine is indicated: The patient is placed in bed in semi-Fowler position, on a liquid diet, with an ice-bag to the abdomen, is given 1 cc. of pituitrin intramuscularly and 4 cc. fluid extract of ergot orally every

four hours, and sedatives as necessary. This régime is continued until the patient's temperature remains normal for five days. At this time, if vaginal bleeding has ceased, the patient is allowed up for two days, and if all is well she is then discharged. On the other hand, if vaginal bleeding continues or recurs, the patient is prepared for operation and under nitrous-oxide-oxygen anaesthesia, is placed in the lithotomy position and the vulva cleansed with green soap and water and 70 per cent alcohol. The cervix is gently dilated until it is possible to insert placental forceps and remove the residual tissue with the minimum of trauma. The curet is not used, but the interior of the uterus is swabbed with a gauze sponge soaked in 3½ per cent tincture of iodine. After this is done, the uterus is packed with plain gauze which is removed in twenty-four hours. The patient remains in bed for five days and then is discharged.

The sequelae of septic abortion include parametritis, pelvic abscess, generalized peritonitis and septicemia. Perforation of the uterus is not a true complication of abortion, but it may occur during induction of an abortion or curettage for post-abortual bleeding, and is generally followed by abscess formation or general peritonitis.

In cases which develop parametritis following abortion, the policy of watchful waiting is advocated. It is essential that pelvic examinations be made rarely and with extreme gentleness⁷. Surgical treatment is contraindicated except when there is violent hemorrhage, and an attempt is first made to control bleeding by using pituitrin and ergot. Packing the vagina is avoided since it will not control the hemorrhage, and if uterine packing is attempted it is just as wise to remove the offending tissue at that time. Otherwise, the patient remains in bed until temperature is normal, and is then discharged.

If localization of the infection occurs and a pelvic abscess forms, a posterior colpotomy is done, a "T" tube is inserted, and the "T" tube remains in place until drainage ceases and the patient's temperature remains normal. The patient may then be discharged.

If there are any signs of spread of infection to the general peritoneal cavity, it is important that this complication be recognized early and that its treatment be started immediately. The patient is placed in semi-Fowler position, and in order to combat intestinal stasis with subsequent distention, a nasal

tube is placed into the stomach or duodenum and continuous suction applied in the manner popularized by Wangenstein. As long as this tube is in place and functioning properly the patient is allowed to have clear liquids. Hot turpentine stupes are placed upon the abdomen at regular intervals. A rectal tube is inserted and prostigmin or pituitrin may also be used to control distention. In order to prevent dehydration of the patient, a 5 per cent solution of glucose in physiological saline solution is given continuously by vein. (It is more comfortable for the patient if the intravenous cannula is inserted into a leg vein rather than elsewhere). Small blood transfusions repeated every few days are of benefit in combating toxemia and anemia. Enterostomy is of no value for the relief of distention in these cases, as the distention is due to paralytic ileus. For no reason should the uterus be emptied after the patient has developed generalized peritonitis. The treatment of peritonitis following abortion, therefore, resolves itself into the treatment of paralytic ileus and toxemia without regarding the abortion.

If the blood culture, which should be taken routinely on every patient, shows that organisms are present in the blood stream, measures should be taken to combat septicemia. Sulfanilamide is apparently a specific for treatment of this complication, and it is to be hoped that the future will show that its use is as good as present reports indicate⁸. If used, sulfanilamide should be given in large doses—eighty to 120 grains in first twenty-four hours, and half this dose the next day, and a maintenance dose of thirty grains may then be given. Repeated blood transfusions also have a place in the treatment of septicemia and the immuno-transfusion, as advocated by Crocker *et al.*⁹, is especially useful. The patient may also be given fluids intravenously if necessary, and other supportive treatment is supplied as needed.

SUMMARY

1. There are 10,000 deaths from abortion annually in this country.
2. A classification of abortion is given.
3. The generally accepted treatment of threatened and inevitable abortion is outlined.
4. The necessity for individualization of treatment in cases of septic abortion is stressed.
5. The sequelae of septic abortion are noted and suggestions for treatment made.

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Buxton Clinic.

SOCIALIZED MEDICINE.*

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In principle, as I understand it, "Socialized Medicine" is not new. Wherever State or Government ownership manifests itself the principle is found. This is true in trade, industry or profession. The principle is Utopian and Ideal.

An Ideal is a thing to be striven for, but not to be attained. The question for us to decide as an individual or as a nation is how shall this ideal be attained. Shall it be attained by evolution or by revolution? The first is constructive and the latter is destructive.

The goal in life either for an individual or for a Government should not be the ideal or perfection, but should be the means by which the ideal or perfection may be attained. The foundation for the ideal or perfection must be built before the ideal or perfection is reached.

The poor widow mother was once asked how did she rear such an ideal son. She said that she did it by first appealing to his sense of *pride* and then, if it were necessary, to his sense of *hide*. A most profound and wonderful truth—*pride* representing an education of duty, sobriety, justice and right, and *hide* representing enforcement, law and punishment.

Probably a just criticism could be made of our Government in her attempt to make us ideal citizens and that criticism would be that our Government spends too much effort and time with our *hide* and too little time with our *pride*.

The United States has appropriated within the past few months a billion and two hundred million of

dollars for national defense to save our *hide*. Would it not be reasonable and wise to take at least two hundred million or one-sixth of this twelve hundred million and put on a nation-wide educational program appealing to their sense of *pride*—teaching her citizens sobriety, duty, justice and righteousness—a universal religion or philosophy that knows no creeds, no clans, no races nor nations? *This would be the climax of a national defense.*

Our national educational system emphasizes creation rather than the creator—physical rather than meta-physical, which is greatly pagan. Religion is divorced from our system of education so far as public sentiment is concerned. Would it not be wise and well for us as a nation to introduce into our system of education a philosophy of sobriety, duty, justice and righteousness—man's true relation to man—and emphasize this to the nth degree? Then our Government would be in a better position to advise, absorb and possess.

What has this to do with "Socialized Medicine"? It has everything to do with it.

It is true that our present system of medical practice is imperfect and improvement is desired. The same can be said of law or any other profession or trade. How shall this improvement be brought about? This is the question that is now agitating the public mind and there are many proposed solutions.

The Government has confidence in the medical profession, which is shown by her citizens placing the life of the sick and the maimed in the hands of her physicians. Shall not more confidence of the

*Brief of address given by Dr. Rawls, on invitation, August 18, 1938, before the Suffolk Rotary Club, of which he is a member.

Government be manifested by inspiring and helping the medical profession to do even greater and more perfect work, or shall the Government say to the profession "We have lost confidence in your ability to serve the sick of the public, so we, the lawmakers of the Government, who are absolutely ignorant of medicine and the practice of same, are going to take charge of it and say to the members of the profession where to go and where not to go—where to get on and where to get off."

The Government will tell you that this branch of work will be under the supervision of members of the medical profession. Yes, this may be true, but it will be a political body and, when you have to acknowledge this, you have branded it with contention and inefficiency.

The medical profession, so far as I know, gladly and gratefully welcomes any Federal help or contributions in the way of public health units and the like, but the profession feels that "Socialized Medicine" is presumptuous and would result in medical or professional inefficiency and an increase in human suffering under the present Government's growth, development and capacity.

Public Health Statistics

I. C. RIGGIN, M. D.,

State Health Commissioner of Virginia.

The report of the State Health Department's bureau of communicable diseases, as compiled for the month of August, shows the following cases compared with the same month in 1937.

| | 1938 | 1937 |
|-----------------------------------|------|------|
| Typhoid and Paratyphoid | 55 | 117 |
| Diphtheria | 74 | 71 |
| Scarlet Fever | 32 | 30 |
| Measles | 109 | 61 |
| Meningitis | 2 | 14 |
| Poliomyelitis | 10 | 11 |
| Rocky Mountain Spotted Fever..... | 8 | 15 |
| Typhus Fever | 1 | 0 |

VIRGINIA STILLBIRTHS: 1936-1937

The Virginia bureau of vital statistics is interested in securing more complete and accurate information on the causes of stillbirths, believing that when these causes are better known, and as physicians become more interested in the study of them, more loss of life before birth may be prevented.

The Bureau desires to express to the physicians of the State its appreciation of their interest in the subject, and to thank them for their splendid cooperation in furnishing information during the years 1936 and 1937. The number of stillbirths decreased during that period from 2,248 to 2,202, but the number reported with no designated cause decreased from 602 to 376.

Conditions affecting the mothers on the whole show but little change, namely from 1,125 to 1,120, but deaths due to abortions and prematurity decreased from 703 to 496, due to more accurate assignment of the primary causes leading to them. For the same reason syphilis increased from 69 to 117 and general and infectious diseases from 35 to 105. The increase of traumatism and overwork from 95 to 155 is due to the attempt of midwives to assign a cause on the new yellow stillbirth form, this being an appealing cause to them. This attempt is welcomed, however. In these preliminary studies the bureau desires to learn just what is in the minds of the attendants. It is hoped that this study will result in the adoption of an American-Canadian list of causes. This list is more scientific than the one compiled by Virginia.

It is hoped that the interest of physicians will continue and increase and that future compilations will become more and more accurate.

Since the causes of many stillbirths and neonatal deaths are the same, birth injuries and syphilis as examples, the study of the two should be along the same lines.

CAUSES OF STILLBIRTH: VIRGINIA

| | 1936 | 1937 |
|---|-------|-------|
| I. CONDITIONS AFFECTING THE MOTHER..... | 1,125 | 1,120 |
| Abortion, premature birth | 703 | 496 |
| Eclampsia and toxemia | 111 | 109 |
| Syphilis | 69 | 117 |
| General and other infectious diseases | 35 | 105 |
| Traumatism and overwork | 94 | 155 |
| Difficult and prolonged labor | 94 | 111 |
| Uterine conditions | 9 | 21 |
| Other conditions of mother | 10 | 6 |
| II. CONDITIONS AFFECTING THE CHILD..... | 521 | 706 |
| Placenta (disease and accident) | 145 | 158 |
| Abnormalities of cord | 117 | 161 |
| Malpresentation | 74 | 174 |
| Malformation | 66 | 74 |
| Deaths in utero | 50 | 87 |
| Birth injury | 38 | 11 |
| Asphyxia of child | 28 | 22 |
| Other conditions of child | 3 | 19 |

Presidents and Places of Meetings of the Medical Society of Virginia

| PRESIDENT | PLACE OF MEETING | YEAR OF MEETING |
|--|--------------------------------|-----------------|
| *Dr. R. S. Payne, Lynchburg | Richmond | 1870 |
| *Dr. R. S. Payne, Lynchburg | Lynchburg | 1871 |
| *Dr. A. M. Fauntleroy, Staunton | Staunton | 1872 |
| *Dr. Harvey Black, Blacksburg | Norfolk | 1873 |
| *Dr. A. G. Tebault, London Bridge | Abingdon | 1874 |
| *Dr. S. C. Gleaves, Wytheville | Richmond | 1875 |
| *Dr. F. D. Cunningham, Richmond | Charlottesville | 1876 |
| *Dr. J. L. Cabell, University | Petersburg | 1877 |
| *Dr. J. H. Claiborne, Petersburg | Richmond | 1878 |
| *Dr. L. S. Joynes, Richmond | Alexandria | 1879 |
| *Dr. Henry Latham, Lynchburg | Danville | 1880 |
| *Dr. Hunter McGuire, Richmond | Old Point Comfort | 1881 |
| *Dr. G. W. Semple, Hampton | Fauquier White Sulphur Springs | 1882 |
| *Dr. W. D. Cooper, Morrisville | Rockbridge Alum Springs | 1883 |
| *Dr. J. E. Chancellor, Charlottesville | Rawley Springs | 1884 |
| *Dr. S. K. Jackson, Norfolk | Alleghany Springs | 1885 |
| *Dr. Rawley W. Martin, Chatham | Fredericksburg | 1886 |
| *Dr. Bedford Brown, Alexandria | Richmond | 1887 |
| *Dr. Benjamin Blackford, Lynchburg | Norfolk | 1888 |
| *Dr. E. W. Row, Orange C. H. | Roanoke | 1889 |
| *Dr. Oscar Wiley, Salem | Rockbridge Alum Springs | 1890 |
| *Dr. W. W. Parker, Richmond | Lynchburg | 1891 |
| *Dr. H. Grey Latham, Lynchburg | Alleghany Springs | 1892 |
| *Dr. Herbert M. Nash, Norfolk | Charlottesville | 1893 |
| *Dr. Wm. P. McGuire, Winchester | Richmond | 1894 |
| *Dr. Robt. J. Preston, Abingdon | Wytheville | 1895 |
| *Dr. Wm. L. Robinson, Danville | Rockbridge Alum Springs | 1896 |
| *Dr. Geo. Ben Johnston, Richmond | Hot Springs | 1897 |
| *Dr. Lewis E. Harvie, Danville | Virginia Beach | 1898 |
| *Dr. Jacob Michaux, Richmond | Richmond | 1899 |
| *Dr. Hugh T. Nelson, Charlottesville | Charlottesville | 1900 |
| *Dr. J. R. Gildersleeve, Tazewell | Lynchburg | 1901 |
| *Dr. R. S. Martin, Stuart | Newport News | 1902 |
| *Dr. J. N. Upshur, Richmond | Roanoke | 1903 |
| *Dr. Joseph A. Gale, Roanoke | Richmond | 1904 |
| *Dr. Wm. S. Christian, Urbanna | Norfolk | 1905 |
| Dr. Lomax Gwathmey, Norfolk | Charlottesville | 1906 |
| Dr. Paul B. Barringer, Charlottesville | Chase City | 1907 |
| *Dr. Wm. F. Drewry, Petersburg | Richmond | 1908 |
| Dr. Stuart McGuire, Richmond | Roanoke | 1909 |
| *Dr. E. T. Brady, Abingdon | Norfolk | 1910 |
| *Dr. O. C. Wright, Jarratt | Richmond | 1911 |
| *Dr. Hugh M. Taylor, Richmond | Norfolk | 1912 |
| *Dr. Southgate Leigh, Norfolk | Lynchburg | 1913 |
| *Dr. Stephen Harnsberger, Catlett | Washington, D. C. | 1914 |
| *Dr. Samuel Lile, Lynchburg | Richmond | 1915 |
| Dr. Joseph A. White, Richmond | Norfolk | 1916 |
| Dr. Geo. A. Stover, South Boston | Roanoke | 1917 |
| *Dr. E. G. Williams, Richmond | Richmond | 1919† |
| *Dr. Paulus A. Irving, Farmville | Petersburg | 1920 |
| *Dr. Alfred L. Gray, Richmond | Lynchburg | 1921 |
| *Dr. E. C. S. Taliaferro, Norfolk | Norfolk | 1922 |
| *Dr. John Staige Davis, University | Roanoke | 1923 |
| *Dr. W. W. Chaffin, Pulaski | Staunton | 1924 |
| Dr. Hunter H. McGuire, Winchester | Richmond | 1925 |
| Dr. W. L. Harris, Norfolk | Norfolk | 1926 |
| Dr. J. Shelton Horsley, Richmond | Petersburg | 1927 |
| Dr. J. W. Preston, Roanoke | Danville | 1928 |
| Dr. J. Bolling Jones, Petersburg | Charlottesville | 1929 |
| *Dr. Charles R. Grandy, Norfolk | Norfolk | 1930 |
| *Dr. J. Allison Hodges, Richmond | Roanoke | 1931 |
| Dr. I. C. Harrison, Danville | Richmond | 1932 |
| Dr. J. C. Flippin, University | Lynchburg | 1933 |
| Dr. R. D. Bates, Newtown | Alexandria | 1934 |
| Dr. F. H. Smith, Abingdon | Norfolk | 1935 |
| Dr. P. St. L. Moncure, Norfolk | Staunton | 1936 |
| Dr. J. M. Hutcheson, Richmond | Roanoke | 1937 |
| Dr. G. F. Simpson, Purcellville | Danville | 1938 |

*Deceased.

†Owing to influenza epidemic and World War, meeting not held in 1918, and Dr. Williams continued as President.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. JAMES B. STONE, 15 Maxwell Road, Richmond.

President-Elect—MRS. HAWES CAMPBELL, Venter.

Corresponding Secretary—MRS. LAWRENCE O. SNEAD, 5307 New Kent Road, Richmond.

Recording Secretary—MRS. JAMES K. HALL, 3011 Seminary Avenue, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, 2502 Hawthorne Avenue, Richmond.

Chairman of Publicity—MRS. FRED J. WAMPLER, 4103 Forest Hill Avenue, Richmond.

Message from the President.

DEAR AUXILIARY MEMBERS:

My year of service as your President is fast drawing to a close. If it were possible I should like at this time to write to each of you personally. Since I cannot do this, I am taking advantage of the last issue of the VIRGINIA MEDICAL MONTHLY under my administration to express to you my gratitude for your cooperation and helpfulness this year. I, alone, could have achieved very little. It is because of the assistance that I have had from Officers, Chairmen, and all Auxiliary Workers that the Virginia Auxiliary completes another successful year!

We have accomplished much, but we have much yet to accomplish. The passing of our Sixteenth Milestone means only the changing of an administration along the Road of Service.

My wish, on turning over the leadership to another, is that we may all continue on this Road together in the future, adding new recruits, and establishing new records along the way.

Faithfully yours,

JANET WATKINS STONE.

To the Local Auxiliaries:

This is the last month I shall serve you as Press and Publicity Chairman and I want to thank you for your cooperation and to tell you that the success of the Auxiliary Page this year has been due to you and not to your chairman. I have appreciated very much your loyalty and promptness, and am sure you will give my successor the same excellent cooperation you have given me.

I wish, also, to thank the State President for her

suggestions and contributions to the page, and am very grateful to Miss Edwards for her courtesy at all times.

With best wishes for the continual growth of each local Auxiliary and the further development of the work of the State Auxiliary, I am

Very sincerely,

(MRS. FRED J.) REBECCA C. WAMPLER,
Chairman, Press and Publicity.

The Southern Meeting.

The Fifteenth Annual Meeting of the Woman's Auxiliary to the Southern Medical Association will be held in Oklahoma City, November 15 through 18. A cordial invitation has been extended to all members and friends of the Virginia Auxiliary to attend this meeting.

New Members

New members of the Medical Society of Virginia since the list published in the May 1938 issue of the MONTHLY are:

Dr. William Eugene Apperson, Sanatorium.
Dr. Q. H. Barney, Altavista.
Dr. Garvey Bruce Bowers, Stonega.
Dr. William Fielding Bryce, Richmond.
Dr. William Stone Burton, Powhatan.
Dr. George Robert Carpenter, Norton.
Dr. Ernest Lee Copley, Richmond.
Dr. Howard Lee Dean, Radford.
Dr. Edward V. Famiglietti, Grundy.
Dr. Elliott Dennis Floyd, Norfolk.
Dr. Malcolm D. Foster, Standardsville.
Dr. Leo I. Hallay, McClure.
Dr. Charles Calhoun Hedges, Suffolk.
Dr. Paul Hogg, Newport News.
Dr. M. L. Holland, Roanoke.
Dr. Claude Gibson Hooten, Lynchburg.
Dr. William H. Howard, Hampton.
Dr. Samuel Walter Huddle, Rural Retreat.
Dr. Harry Gilman Hudnall, Covington.
Dr. David Clyde Keister, Osaka.
Dr. Edmund Moseley La Prade, Richmond.
Dr. Marion S. Love, Washington, D. C.
Dr. J. Rollins McGriff, Arlington.
Dr. Nowell Darden Nelms, Mathews.
Dr. Melvin Roy Nicholson, Arlington.
Dr. William Oscar Pollard, Speers Ferry.
Dr. Grover Dewitt Rackley, Richlands.
Dr. Alexander Stuart Richardson, Grundy.
Dr. Guy Carson Richardson, Bristol.
Dr. Sam Silver, Waynesboro.
Dr. Richard Odell Smith, Pulaski.
Dr. Hugh Otto Staley, Splashdam.

Dr. James Franklin Waddill, Norfolk.
 Dr. Thomas Watkins, Drakes Branch.
 Dr. Angus Kerr Wilson, Norfolk.
 Dr. I. S. Zfass, Williamsburg.
 Dr. William Wallace Zimmerman, Waynesboro.

Truth About Medicine

In addition to the articles previously enumerated, the following have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association: Gilliland Laboratories.

Typhoid Vaccine (Gilliland), 50 cc. size package.

New and Nonofficial Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Theelin—P. D. & Co.—A brand of estrone (theelin)—N.N.R. Theelin—P. D. & Co. is marketed in the following dosage forms: Ampules Theelin Aqueous, 1 cc.; Ampules Theelin in Oil 1 cc.; Vaginal Suppositories Theelin. Parke, Davis & Co., Detroit, Mich.

Theelol—P. D. & Co.—A brand of estriol (theelol)—N.N.R. Theelol—P. D. & Co. is marketed in the following dosage forms: Kapseals Theelol, 0.16 mg., and Kapseals Theelol, 0.12 mg. Parke, Davis & Co., Detroit, Mich.

Sulfanilamide Tablets, 5 grains.—Each tablet contains sulmanilamide (New and Nonofficial Remedies, 1938, p. 450), 5 grains. Charles C. Haskell & Co., Inc., Richmond, Va. (*J. A. M. A.*, August 27, 1938, p. 784.)

Propaganda for Reform

Sodium Thiosulfate in Syphilis.—Sodium thiosulfate was popularized as a remedy for postarsphenamine dermatitis and certain other metallic poisonings by the work of McBride and Dennie in 1923. The evidence accumulated then and which has continued to accumulate as to its value in the treatment of metallic poisoning is of two varieties. Laboratory studies calculated to measure the excretion of arsenic or of certain other heavy metals in experimental animals and human beings with or without the added influence of sodium thiosulfate have been completely contradictory. The reports of the value of sodium thiosulfate in the treatment of exfoliative dermatitis, other types of arsenical treatment reactions, and in other types of skin diseases not associated with the treatment of syphilis, are, to the critical observer, as unconvincing as the laboratory work. So far as arsenical reactions are concerned, one group of observers feels that the drug is of some value largely on the basis that one or a few patients treated with it have recovered, whereas another group of observers feels that the drug is completely valueless. The drug has no spirocheticidal action and is completely without value in the treatment of syphilis. (*J. A. M. A.*, July 2, 1938, p. 84.)

Dangers of Protamine Insulins.—Reports of reactions following the use of protamine zinc insulin have appeared in considerable number. In one of the earlier discussions of protamine zinc insulin it was reported that hypo-

glycemia from this type is more subtle in onset and on the whole subjective symptoms are less severe than with soluble insulin. Preliminary symptoms of shakiness, sweating and palpitation may be absent; thus severe hypoglycemic symptoms may appear without warning. Ample evidence is now available that protamine zinc insulin is not a fool-proof substitute for the older preparation. Although reactions to it seem to appear with less frequency, they also are often characterized by the suddenness of onset, delayed and therefore unexpected appearance, and symptoms precipitated by exercise at such a distant time as also to be wholly unexpected. Although the development of protamine zinc insulin is an advance of unquestioned value to many diabetic patients, the possibilities of delayed severe reactions cannot be ignored. (*J. A. M. A.*, July 16, 1938, p. 254.)

Book Announcements

Materia Medica. Drug Administration and Prescription Writing. By OSCAR W. BETHEA, M.D., Ph.G., Ph.M., F.C.S., F.A.C.P., Professor of Clinical Medicine, Tulane School of Medicine; Professor of Therapeutics, Tulane Graduate School of Medicine; Senior Physician, Southern Baptist Hospital; etc. Philadelphia. F. A. Davis Company. 1938. Octavo of x-577 pages. Cloth. Price \$5.00.

This is an interesting volume, since it lends itself as a textbook for the student of medicine, dentistry, and pharmacy. It also finds a place in the work of the graduate, especially in the practice of medicine, for there are included a number of formulas and contributions which suggest a basis of treatment in many of the various ailments of the human body with which the young physician may come in contact.

It is a sign of more than passing interest to note that the author has made this volume conform to the U. S. P. and the National Formulary.

Many proprietaries are valuable and sooner or later some of them will find their way into the U. S. P., but until proper recognition is given by authorities, whose findings can not be easily questioned, it will be wise not to give them prominent notice in a text intended largely for teaching—the detail man will take fatherly care of the graduate.

The arrangement of Part 1 with its consideration of official drugs and its prescriptions for acceptance and deductions will offer the student or graduate a lead when in doubt or in undergoing confusion.

Part 2 on Prescription Writing is brief, sane, and helpful and it should give timely help to those whose knowledge of doses, calculation of amounts, choice of a vehicle and form of administration is just a little hazy.

General information to be found in Part 2 and Part 3 and the Appendix will be of value in many phases of medical jurisprudence with which the young practitioner is not always entirely familiar.

ROSHIER W. MILLER.

Methods of Treatment. By LOGAN CLENDENING, M.D., Clinical Professor of Medicine, Medical Department of the University of Kansas; Attending Physician, University of Kansas Hospitals; etc. With Chapters on Special Subjects by H. C. Anderson, M.D.; Ursulla Brunner, R.N.; J. B. Cowherd, M.D.; Paul Gempel, M.D.; H. P. Kuhn, M.D.; Carl O. Rickter, M.G.; F. C. Neff, M.D.; E. H. Skinner, M.D.; E. R. DeWeese, M.D.; and O. R. Withers, M.D. Sixth Edition. St. Louis. The C. V. Mosby Company. 1937. Octavo of 879 pages. Illustrated. Cloth. Price \$10.00.

In *Methods of Treatment*, the busy worker will readily secure advice and helpful suggestions.

When more time for extended reading arrives, the reader will find reward throughout the volume. It never grows stale. The clear, concise, modern and scientific presentation of the subject matter is replete with quaint humor and fine philosophy.

Ego is not in evidence. Credit for the works of others is freely given. Opposing views are frankly considered and conclusions kindly and openly expressed. For the student and inquiring worker this attitude of heart and mind will find appreciative response and the absence of fruitless padding will banish tire of body and restlessness of soul.

The segregation of "General" from "Special Therapeutics" presents to the reader a clear-cut view without the endless repetitions so frequently encountered in many literary essays. In fact throughout the twenty-five chapters it would be difficult to observe either in the discussions of the various diseases or their treatment, an unwise or useless repetition.

In the treatment of "The Psycho-neuroses" the author has given of his eloquence and fine philosophy, viewpoints that may with interest, pleasure and profit be read by specialist and general practitioner. Of unusual value are the 103 illustrations of the volume—helpful to all, but of special interest to the young practitioner who is looking for help or a hint for some emergency.

The inclusion of sane and practical hints on diet will give the reader a composite view of treatment in a given case, because one can scarcely follow a diagnosis without a dual consideration of medicine and diet.

It is refreshing to discover that the author not only conforms to the United States Pharmacopoeia

but almost excludes reference to the inexhaustable list of proprietary drugs.

Were I called upon to point out the evidence of the author's liberal views and right to lead, a simple quotation in the preface would suffice: "I have departed from my extremely conservative view about the use of artificial pneumothorax in tuberculosis and have rewritten the chapter to agree with more modern practice."

In brief the author has made every effort to produce a volume on "Methods of Treatment" that should find a prominent place amid the working tools of the medical man—a book—scientific, up to date, readable, helpful—a literary gem.

The reviewer has twice been called upon for the review. Our only excuse is that in exercising his right to read the volume he frequently forgot the review—he hopes the offense will be pardoned.

ROSHIER W. MILLER.

Syphilis, Gonorrhea and the Public Health. By NELS A. NELSON, B. S., M. D., F. A. P. H. A., Director, Division of Genitoinfectious Diseases, the Massachusetts Department of Public Health. And GLADYS L. CRAIN, R. N., Epidemiologist, Division of Genitoinfectious Diseases, the Massachusetts Department of Public Health. New York. The Macmillan Company. 1938. Octavo of xvii-359 pages. Cloth. Price, \$3.00.

This is a new and arresting book on the genitoinfectious diseases. It is of value to any physician and especially to those treating syphilis and gonorrhea, along with private practice. It is also of interest to laymen who wish information and instruction on the subject treated in this book and written in language understandable to them.

The sequence of the subject matter is logical and excellent. It is divided into seven parts: I. Attitudes and Approach; II. The Genitoinfectious Diseases; III. The Statistics of Syphilis and Gonorrhea; IV. The Control of Syphilis and Gonorrhea; V. Costs; VI. Social Hygiene; and VII. The Scandinavian Example; Under these divisions is discussed the history, origin, symptoms, diagnosis, laboratory technique and treatment of each disease.

The style is easy and flowing, and the subject matter is presented in attractive form. It is excellent for reference and hard to lay aside when you start reading. Every physician will profit by owning a copy and it should be recommended to the public at large.

F. W. UPSHUR.

Virginia Medical Monthly

Founded by LANDON B. EDWARDS, M. D., April, 1874

Owned by MEDICAL SOCIETY OF VIRGINIA since November, 1919

WYNDHAM B. BLANTON, M. D., *Editor*

AGNES V. EDWARDS, Richmond, *Business Manager*

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All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Monthly, 1200 East Clay Street, Richmond, Va.

This journal is not responsible for the opinions and statements of its contributors.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Subscription Price: \$2.00 per annum in advance. Single Copies 25c.

VOLUME 65

OCTOBER, 1938

No. 10

Editorial

Yesterday, Today and Tomorrow.

The report of the Committee on the Cost of Medical Care in 1932 was a bombshell that loosed many medical and lay minds from their traditional moorings and set in motion currents and cross currents within and without the medical profession. The antecedent and concomitant activities of several philanthropic foundations in the interest of so-called better medical care of the American people were ascribed by some to a meddlesome spirit and a misguided zeal, by others to an admirable desire to do something about a long standing need. The massive two-tome report published in 1937 under the name of *American Medicine* received widespread recognition in the daily press and was followed by an avalanche of articles on all economic phases of medicine in most of the magazines of the country. Finally, a rift within the lute of professional harmony was detected by the public when the proposals of the "Committee of 430" were circulated by these self-constituted spokesmen of medicine.

How much all this discussion influenced the later interest of the government in the better medical care of the American people and how much in turn this discussion was aided and abetted by official benediction is uncertain. In any event history will record the following sequence of significant events: the passage of the Social Security Act (1935) with its provisions dealing with medical care; the appoint-

ment by the President (August 1935) of the Inter-departmental Committee under the Chairmanship of Miss Josephine Roche charged with expediting the benefits of the Act to the intended recipients; the National Health Survey made by the United States Public Health Service covering 800,000 families including 2,800,000 people; the report of the Technical Committee on Medicine; and finally the National Health Conference (July 18-20, 1938), a somewhat conglomerate group composed of persons representing labor, welfare organizations, government employees, radical newspapers, with a sprinkling of doctors and others connected with the actual supply of medical service. The proceedings and recommendations of this conference were published in the *Journal of the American Medical Association* (July 30, 1938) and constituted the agenda of the called meeting of the House of Delegates of the American Medical Association on September 16, 1938.

History will also record that the American Medical Association had been busy during this period of gathering storm, busy with a propaganda of opposition. From the start it adopted the tactics of defense. It had much to defend that was fine, and there was cheering from the ranks. But in its position there was something of the proverbial behavior of the pursued ostrich, and this attitude called forth mutterings and head shakings from the progressives. Retreat followed retreat until the House of Delegates

stood defiantly, like Roderick Dew, before a rock of ten inviolable principles. The mutterings having drowned out the cheering, the Association had a sudden change of heart and past history has been forgotten in the triumph of the present liberal and logical statement of a more tenable position on the part of organized medicine.

II.

When, at 10 A. M. on September 16, 1938, in Chicago, Dr. H. H. Shoulder's hickory gavel, supposed to endow the wielder with some of the attributes of the Old Tennessean Roughneck, smacked down on the speaker's desk, the third extraordinary session of the American Medical Association came to order. Delegates looked serious and agreed that it was the most important meeting the Association had ever called. (And yet it did not at any time make the front page of the newspapers.) It was serious because the Association had reached the Rubicon. Before it lay the five definite recommendations of the National Health Conference with the prospect of their principles being shortly drafted into law. To accept or not to accept these recommendations was the question. Committees and subcommittees were quickly organized to consider each of the five recommendations separately and to report back their own recommendations to the House. For hours the committees sat, heard individuals and representatives of medical organizations present their views, reached their own conclusions, framed them, incorporated them into a consolidated report of a Committee of Twenty-five and at the afternoon session of the second day the House of Delegates received and accepted a final and epochal report.

The report is published elsewhere in this issue of the MONTHLY. In general it may be said that with important exceptions it conforms closely to the recommendations of the National Health Conference. In substance the five sectioned report says:

I. We favor expansion of the Public Health and maternal and child welfare services, and the creation of a National Department of Health with a cabinet officer who is a medical man, but we urge that all expenditures be carried out on the advice and with the approval of local medical societies.

II. We favor the expansion of hospital facilities where the need for them can be demonstrated, believing that the chief deficiency is beds not buildings, and that this deficiency can be met largely by subsidizing existing institutions.

III. We favor better medical care of the indigent, believing that this medical care is the responsibility of the local communities and the professions now dedicated to the service of the sick, and that federal assistance is needed only when local measures fail. It is our belief that insufficient food, shelter and clothing bear a causative relation to sickness and that relief from these factors should antedate medical assistance.

IV. We favor hospital insurance and voluntary sickness insurance when not in conflict with the ethical principles laid down by state and local medical societies. We disapprove of government subsidy or participation in insurance and favor no form of national compulsory health insurance.

V. We favor the principle of insurance against loss of wages during sickness.

It will be seen that the American Medical Association is still opposed to compulsory sickness insurance, and to lay and political control of medical affairs, that it still believes bad economics is more to blame for the indigent's poor health than is lack of medicine, and that it urges caution in the expenditure of public funds. The great advance in its point of view is in its willingness to work with the government and in its determination at last to accept responsibility in the expansion of medical services which have naturally evolved from our present social and economic revolution. On the final roll call on the report in the House of Delegates there was not a dissenting voice, and on these broad and liberal principles organized medicine now stand with a united front.

III.

What has been done amounts to very little compared to what still must be done. In general it may be said that the immediate objectives of the Association are definite:

I. In creating a Committee of Seven to cooperate with a similar group appointed by the government to work out plans for putting into effect its recommendations, the Association has not simply made a friendly gesture but has definitely gone on record as meaning to play ball. It is hoped that the Committee will not stand on its dignity. If necessary it must go to Berchtesgaden.

II. Indications are clear also that the representatives of organized medicine will have to make their voice heard in the next Congress for it is rumored one or two bills will be presented there to instrument

the recommendations of the National Health Conference.

III. The obligation resting upon the Association to continue its study of the many phases of the new socio-economic side of medicine is obvious. It must press its own lagging survey, it must continually analyze the results of the one thousand and one experimental plans now in operation, it must gather, sort out and interpret new data, and advise with, and counsel, component societies all over the country.

IV. Not the least difficult job before organized medicine will be the elaboration of the techniques by which it may safeguard one of its inviolable tenets: that medical men should control all funds, services and facilities of medicine. How state and local medical societies are to tell Federal, state and local health officers and other public officials how and when and where to expend the funds allocated to the various agencies concerned with public health is going to require a judicious admixture of diplomacy and brains.

V. The reinstatement of the medical profession in public esteem will depend not only on what organized medicine does in the future but also on what it says through its press and its spokesmen. Through our accomplishments and the record of these accomplishments in print we must give the lie to the damning impression now abroad that doctors as a whole are Bourbon in mind, reactionary in spirit and selfish at heart.

VI. Finally it is the will of the 110,000 doctors of the United States of America as represented in the House of Delegates of the American Medical Association that American medicine will no longer play the part of critic and passive bystander boasting past

achievement and an inflexible ethical code, but that it will henceforth say to the government and its agents we are not going to see you do so much, we are determined to help you do no less.

Vitamin E.

The fat soluble antisterility vitamin which has proved useful in threatened abortion and sterility, and which occurs in wheat germ, cotton seed, palm and rice oils as well as in lettuce and whole grain cereals, has at last been chemically identified, synthesized in the laboratory and expressed in chemical formula. These important facts are announced in a recent issue of *Science* (July 8).

The new synthetic preparation is a white powder called alpha tocopherol. Fed to sterile female white rats, previously deprived of natural vitamin E, it promptly restored the normal faculty of producing healthy offspring. Alpha tocopherol appears to be identical with vitamin E. It is not to be confused with durohydroquinone which has been known for sometime to have an action like that of vitamin E. This most recent synthesis of another of the vitamins now increases the number which have been isolated in pure chemical form and synthesized, to five.

The allotment of one of the Round Table Discussions at the next meeting of the Medical Society of Virginia to the subject, Vitamins, will afford opportunity for the discussion of some of the newer knowledge concerning them. It would be well if the conservative attitude expressed in *New and Non-Official Remedies, 1938*, were adopted by this gathering, and if its discussions were limited to what this publication calls "allowable claims."

Proceedings of Societies

The Dickenson-Buchanan County Medical Society

Met at Grundy, August 17, with an attendance of about twenty members. After a luncheon at the hospital, the members were entertained with a moving picture presented by Dr. Turner. Dr. F. H. Smith, Abingdon, presented a paper on "Statesmanship in Medicine" which was discussed by several members.

Dr. E. V. Flamiglietti, Grundy, was admitted to membership in the Society.

The next meeting will be held at Grundy on September 14.

T. C. SUTHERLAND,
Secretary.

Elizabeth City County Medical Society.

At the July meeting of this Society, Dr. Harold W. Kinderman, Hampton, and Dr. Frank A. Kearney, Phoebus, were elected to membership.

On September 12, a joint meeting was held with

the Warwick Society to hear Mr. Robert Preston discuss the Pollution Control problem in the Hampton Roads area and passed a unanimous resolution endorsing the project.

The Society does not hold regular meetings as the entire membership is represented at the weekly staff meetings of the Dixie Hospital and at the monthly meetings of the Virginia Peninsula Academy of Medicine.

Dr. W. P. Smith, Hampton, is president, and Dr. Robert H. Wright, Jr., secretary, of the Elizabeth City Society.

Loudoun County Medical Society.

At the regular monthly meeting of this Society on August 9, the following officers were elected for the ensuing year: President, Dr. H. H. Green of Hillsboro; vice-presidents, Dr. G. H. Musgrave of Leesburg and Dr. W. H. Turner, Roundhill; and secretary-treasurer, Dr. F. T. Hauser of Purcellville.

Lynchburg Academy of Medicine.

The regular meeting of the Academy was held in the Elks' Club, September 12, at 8:00 P. M. Dr. J. W. Davis, Sr. presided in the absence of the President, Dr. Elisha Barksdale, and Vice-president, Dr. Sam Oglesby.

Mr. Raine Sydnor, Manager of the Lynchburg Hospitalization plan explained their program and solicited the members of the Academy as a group to subscribe.

The Secretary was instructed to inform the Department of Clinical and Medical Education of the Academy's desire to have courses in Internal Medicine presented to its members.

Dr. H. C. Brownley presented a very interesting and well-written paper on "Recent Ideas on Liver Function." Discussion was led by Drs. D. P. Scott, John Hundley, Jr., and D. P. Peters.

C. E. KEEFER, *Secretary.*

The Rockbridge County Medical Society

Was re-organized on September 13, having been dormant for some time, due to the death of the president, Dr. C. S. Groseclose, and no vice-president having been elected. Dr. F. L. Thurman of Buena Vista was chosen president, with Dr. Hugh Bailey of Brownsburg vice-president, and Dr. E. P. Tompkins of Lexington secretary-treasurer.

At this meeting Drs. A. L. Carson and L. L. Shamburger explained the workings of the pre-natal

clinics established throughout the State, and answered many questions put by members. After full discussion it was deemed feasible to establish such a clinic in Rockbridge county, which is to be under the auspices of the Public Health department of the county. The necessary arrangements and details will be carried out by Dr. R. P. Cooke and the newly-appointed assistant Health Officer, Dr. S. J. Beeken. All general practitioners present indicated willingness to take turns in conducting these clinics.

Dr. Hugh Bailey was elected delegate to the State Society meeting in Danville, early in October, with Drs. H. L. Mitchell, and M. T. Vaden, as alternates.

It was voted to have monthly meetings of the society instead of at longer intervals which have heretofore been the rule.

E. P. TOMPKINS, *Secretary.*

The Southside Virginia Medical Association

Held its 139th quarterly meeting at Piedmont Sanatorium, Burkeville, on the afternoon of September 13, with a good attendance. An unusually interesting program was rendered, at the close of which the visiting doctors were entertained at a delightful dinner by Dr. Woodson and his staff.

The next meeting of the Southside will be held in Petersburg on the second Tuesday in December.

R. L. RAIFORD, *Secretary.*

Virginia Peninsula Academy of Medicine.

The first Fall meeting of the Academy was held at the James River Country Club, Newport News, on September 19. Dr. S. A. Cosgrove, clinical professor of Obstetrics at Columbia University, spoke on "The Toxemias of Late Pregnancy". This was discussed by Drs. C. J. Andrews, Norfolk, and H. Hudnall Ware and M. P. Rucker, Richmond.

Meetings are held on the third Monday of each month and Dr. Chevalier L. Jackson, Philadelphia, will be the speaker at the October meeting. Programs for the year will have the following guest speakers: Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service; Dr. E. C. Drash, University of Virginia; Dr. John Royall Moore, Temple University; Dr. Henry Christian, Harvard Medical School; Dr. A. Graeme Mitchell, University of Cincinnati; Dr. E. H. Richardson, Johns Hopkins Medical School; and Dr. Vincent Archer, University of Virginia.

Dr. Edward B. Mewborne, Newport News, is secretary of the Academy.

News Notes

Danville Awaits You!

Programs were recently issued for the sixty-ninth annual meeting of the Medical Society of Virginia in Danville, and everything is in readiness for an excellent meeting. There will be scientific papers and round tables, scientific and commercial exhibits, and a subscription dinner with a floor show by New York talent. The business sessions will start on Tuesday—the Council at 11:00 a. m., and the House of Delegates at 2:00 p. m. The first general session will be on Tuesday evening at 8:00 p. m., with the scientific program proper on Wednesday and Thursday until lunch time. There will be plenty to interest and entertain you. Be sure to come!

Round Tables to Answer Questions about Which you are in Doubt.

Much interest is centering about the Round-Table discussions to be held on Wednesday afternoon. These present subjects of varied interest and should prove a popular feature. There will be a box at the Registration desk for receiving questions you may wish discussed at the Round Tables. Write off your questions before coming to the meeting, stating at the top of the slip at which Round Table you wish it discussed, and it will be handed the chairman of that group. This may be signed or unsigned as you prefer. Questions may also be received from the floor during the meetings, but questions presented in advance will insure you of hearing about matters in which you are most interested and will also be of great assistance to those in charge.

If members generally will make use of the Round Tables by asking questions as requested above, they should prove a kind of consultation service in regard to any puzzling case in your practice.

Luncheon Meetings in Danville.

Several group organizations have arranged for luncheon meetings in Danville at the time of the State Society meeting. Those of which the MONTHLY has been advised are to be at 1:00 p. m. at Hotel Danville and are as follows:

Pediatric Society luncheon in Danville Room
Obstetrical and Gynecological luncheon in North Room
Jefferson Hospital Interne luncheon in Room 803

Urological Society luncheon in Room 703

College of Physicians luncheon in Coffee Shoppe

In some cases, return cards have been sent members of the organizations listed above. Those who have not responded are requested to do so at once.

The Virginia Obstetrical and Gynecological Society

Will hold its annual meeting in the North Room of the Hotel Danville on Wednesday October 5 at 1:00 P. M. The guest speaker will be Dr. Louis H. Douglass, Professor of Obstetrics at the University of Maryland Medical School, whose subject will be "The Problem of the Posterior Occiput". Following the dinner and business session of the Society, all physicians attending the State Medical Society meeting are cordially invited to hear Dr. Douglass.

Testimonial Dinner to Dr. Stuart McGuire.

In appreciation of Dr. Stuart McGuire and his interest in and devotion to the Richmond Academy of Medicine, members of the Academy held an informal testimonial dinner in his honor, at the Commonwealth Club, September 27 at 7:30 o'clock. Many friends of Dr. McGuire, other than members of the Academy, attended.

Dr. A. I. Dodson, president of the Academy, called the meeting to order and then called upon Dr. J. Shelton Horsley, chairman of the committee, for a few remarks. Dr. Horsley presented the toastmaster for the evening, Dr. F. W. Boatwright, president of the University of Richmond, and life-long friend of Dr. McGuire, who conducted the rest of the proceedings, the main feature being an address by Dr. J. M. T. Finney, emeritus professor of surgery, Johns Hopkins School of Medicine, and long-time friend of Dr. McGuire. His talk and other sections of the program were broadcast by WRTD, beginning at 9:00 o'clock. Following Dr. Finney's address, Dr. Roshier W. Miller presented to the Academy on behalf of the donors a portrait of Dr. McGuire recently painted by Bjorn Egeli. Dr. Dodson accepted the painting for the Academy membership. The artist was then introduced, followed by a presentation of a portfolio of letters to Dr. McGuire. The meeting closed with an address by Dr. McGuire.

The Academy of Medicine committee in charge of the program consisted of Dr. J. Shelton Horsley, chairman, Dr. Roshier W. Miller and Dr. W. Lowndes Peple, Dr. Charles R. Robins, Dr. J. K. Hall, and Dr. M. Pierce Rucker.

The International Assembly of the Inter-State Postgraduate Medical Association of North America

Will be held in Philadelphia, October 31, November 1, 2, 3, 4, under the presidency of Dr. Elliott P. Joslin of Boston. The Benjamin Franklin will be hotel headquarters, but all scientific and clinical sessions will be in the Auditorium. About eighty distinguished teachers and clinicians will appear on the program. There will also be pre- and post-assembly clinics in Philadelphia hospitals on October 29 and November 5. All members of the medical profession in good standing in their State and Provincial Societies are invited to attend the Assembly, the registration fee for which is \$5.00. Further information may be obtained from Dr. William B. Peck, Managing-Director, Freeport, Illinois.

Dr. C. M. Dobson,

Recently of Wisconsin, is now associated with Dr. Thomas Wheeldon of Richmond, in the practice of orthopedics. Dr. Dobson is a graduate of the Medical Department of the University of Wisconsin, after which he interned for two years in hospitals in California. Later he served a two-year residency at Shriner's Hospital for Crippled Children and was last year resident in orthopedics at Milwaukee County Hospital in Wauwatosa.

Dr. Clarkson Honored.

Dr. Wright Clarkson, Petersburg, was elected President of the American Association for the Study of Neoplastic Diseases at its meeting in Washington, September 8-10.

Dr. J. Shelton Horsley, Richmond, was chairman of the section on Lesions of the Breast and also presented a paper on Lesion of the Stomach. Dr. John S. Horsley, Jr., gave a paper on Tumors of the Male Breast, and Dr. Clarkson on Lesions of the Stomach and Colon.

The next meeting of the Association will be held in Detroit in April.

Changes in Faculty at University of Virginia.

Among changes in the faculty at the University of Virginia are noted the following: Dr. Andrew D.

Hart appointed professor of clinical medicine and director of student health; and Dr. Prentice Kinser, Jr., promoted to assistant professor of orthopedic surgery.

Promotions in U. S. Public Health Service.

The following doctors, graduates of Virginia schools, have been promoted and commissioned as Passed Assistant Surgeons in the Regular Corps of the U. S. Public Health Service: Dr. John B. Hozier, New Martinsville, W. Va., class of 1933, University of Virginia, Department of Medicine; and Dr. Hugh L. C. Wilkerson, Hot Springs, Ark., class of 1933, Medical College of Virginia.

Duke University Presents Symposium.

As part of the Duke University Centennial Celebration a symposium on Medical Problems will be held on October 13, 14, and 15. The subjects for discussion are The Future of American Medicine and Diseases of Special Interest to Physicians in the Southern States. Speakers of prominence have been selected to lead these discussions.

The symposium is open to all physicians and persons in related fields of work. There are no registration fees or other charges. For information write to Committee on Medical Symposium, Box 3712, Duke Hospital, Durham, N. C.

Married.

Dr. Harry Justice Warthen, Jr., and Miss Martha Winston Alsop, both of Richmond, September 1.

Dr. Frederick Nimrod Thompson of Newport News and Miss Frances Willett Edwards of Miami, Fla., and Newport News, September 29.

Dr. Prosser Harrison Picot of Richmond and Miss Elmyra Davidson Williams of Wytheville, September 3.

Dr. Hugh Grigsby Whitehead, Jr., and Miss Natalie Contee Whiting, both of Baltimore, Md., September 24. Dr. Whitehead is an alumnus of the Medical School of the University of Virginia, class of '32.

Dr. Thomas Hamilton Hogshead of Staunton and Miss Catherine Louise Gierhart of Yonkers, N. Y., the latter part of September.

Dr. Charlton Gilmore Holland, Jr., of Danville and Miss Louise Fraser Beckwith of Petersburg, August 6.

Centenary of the Cellular Theory.

The scientific world celebrates this year the

centenary of the cellular theory which was founded by the German botanist—Mathias Jacob Schleiden and by the zoologist Theodor Schwann, a hundred years ago. To commemorate this event, which it is said has had the same far-reaching consequences as the theory of evolution, the Mexican Society of Natural History (Sociedad Mexicana de Historia Natural) resolved at their meeting, May 6, to publish a special volume which would contain papers relating to problems of the cellular theory and kindred subjects. All biologists interested in the cellular theory are invited to collaborate in the preparation of the volume. The paper, which according to the jury is the outstanding contribution, will be awarded the Schleiden-Schwann medal of the Mexican Society of Natural History. Every cytological paper is welcome, the final date for acceptance of these being January 31, 1939. Terms of the contest may be secured from the Sociedad Mexicana de Historia Natural, Apartado Postal 1079, Mexico, D. F.

Richmond Doctor Honored.

Dr. Warren T. Vaughan of Richmond has been twice honored in the past few months, having been named president of the Society for the Study of Asthma and Allied Conditions and more recently chosen as president-elect of the American Society for the Study of Allergy.

Dr. T. Allen Kirk

Of Roanoke was elected president of the American Rose Society at its annual convention in Hershey, Pa., the middle of September.

Dr. Louis Lovenstein,

Class of '35, Medical College of Virginia, has opened offices at 928 West Grace Street, Richmond, where he is engaged in the practice of internal medicine.

Dr. A. McClintic Byrd,

Formerly located in Virginia, but more recently of Northfork, W. Va., has moved to Bluefield, W. Va., with offices in the Coal and Coke Building. His practice is limited to rectal and genito-urinary diseases.

A Conference on Rural Medicine

Is to be held at The Mary Imogen Bassett Hospital, Cooperstown, N. Y., October 7 and 8. The program will be conducted in four parts, as follows: Rural Morbidity, Health Department Programs and

School Health Programs in Rural Areas, Postgraduate Medical Education in Rural Areas, and Economics of Rural Medicine.

Dr. Alfred W. Norris,

Medical College of Virginia, class of '37, who recently completed an internship at the Passaic General Hospital, Passaic, N. J., has located at Jonesport, Maine, for general medical practice.

American College of Surgeons.

The annual Clinical Congress of the American College of Surgeons will be held in New York City, October 17-21. Those who wish further information about the Congress may secure it from headquarters at 40 East Erie Street, Chicago.

The Academy of Physical Medicine

Will hold its sessions in Washington, D. C., October 24, 25 and 26, with the cooperation of Government medical and scientific services. There will be reports of recent studies in Physical Medicine and related subjects, with demonstrations and clinics, by recognized authorities. The Willard will be hotel headquarters and the clinics will be held at the Walter Reed General and St. Elizabeth's Hospitals. Members of the medical profession and interested students are cordially invited. Dr. Herman A. Osgood, 144 Commonwealth Avenue, Boston, Mass., is secretary.

The New York Polyclinic Medical School and Hospital

Announces the opening of the Urological Department in its new clinic building. The medical profession is cordially invited to inspect this department, which is under the supervision of Drs. Joseph F. McCarthy, Daniel A. Sinclair, David Geiringer and Howard S. Jeck and their associates.

The International Congress (10th) of Military Medicine and Pharmacy

Will be held in Washington May 7 to 15, 1939. Invitations to participate have been sent to every country by the President of the United States and already acceptances have been received from several countries. A full scientific and social program has been arranged and will shortly be mailed to all the countries to which invitations were sent. A large registration is hoped for and every effort will be made by the Committee in charge to make the Congress an attractive one to those participating. Gen-

eral Charles R. Reynolds, the Surgeon General of the United States Army, will be the President of the Congress. Registration, without fee, is open to all officers of the medical services of the Army, Navy, Air and Colonial services, National Guard, territorial forces and public health service, whether active or reserve.

Colonel Harold W. Jones of the Army Medical Corps is Secretary General. The Secretarial office is at the Army Medical Library, Washington, D. C.

Dr. Zdenka A. Hurianek,

Who was last year in charge of health work and resident physician to Mary Baldwin College at Staunton, has located in Alexandria for general practice, with offices at 115 North Columbus Street.

Offices Moved.

The following Richmond doctors announce removal of their offices:

Dr. James P. Baker, Jr., to 805 West Franklin Street; and

Dr. William Bickers to Medical Arts Building.

A Symposium on Mental Health.

Plans are being made for a Symposium on Mental Health to be presented before the Section on Medical Sciences of the American Association for the Advancement of Science, to be held in Richmond, December 28-30. This will be under the leadership of Dr. Walter L. Treadway, Assistant Surgeon-General of the Public Health Service in charge of mental-hygiene activities. The committee consists of eminent psychiatrists who are being assisted by the American Psychiatric Association, the U. S. Public Health Service, the Mental Hospital Survey Committee, and the National Committee for Mental Hygiene.

This will be the first time in the history of American psychiatry and the mental-hygiene movement that the subject of mental health has received the special attention of this great scientific body as a major topic on its agenda. The American Association for the Advancement of Science is the largest scientific body in the United States, having an active membership of over 19,000, and an affiliate membership of about 750,000.

The plan for the Symposium on Mental Health contemplates the holding of six sectional sections over a three-day period. Papers prepared for this Symposium will be published in advance and used as a

basis for the discussions. There will be an opportunity for general, open discussion at each session.

Communications should be addressed to Symposium on Mental Health, American Association for the Advancement of Science, Room 822, 50 West 50th St., New York City.

The National Society for the Prevention of Blindness

Has issued a public call for (1) information concerning new industrial or occupational eye hazards—both accident and disease hazards; (2) recent and significant statistics concerning any occupational hazards to sight—showing frequency, severity, causes, nature of injury, degree of impairment, cost, etc.; (3) photographs showing either hazards to sight or protection against such hazards and; (4) most important of all—information concerning successful methods of eliminating, counteracting or alleviating the disease and accident hazards to eyes. This information is desired for consideration in the revision of "Eye Hazards in Industrial Occupations".

Announcement has also been that *The Journal of Social Ophthalmology*, a quarterly publication, is now being issued by the International Association for Prevention of Blindness. This is for the purpose of facilitating the exchange of information throughout the world in the organized campaign for the prevention of blindness and the conservation of vision. Articles appear in both English and French.

Offices for the National Society are located at 50 West 50th Street, New York City.

The New York Academy of Medicine

Extends a welcome to all members of the medical profession to attend its 1938 Graduate Fortnight, October 24 to November 4. The purpose of the Fortnight is to make a complete study and authoritative presentation of a subject of outstanding importance in the practice of medicine and surgery—Diseases of the Blood and Blood-Forming Organs. The program includes addresses by recognized authorities in their special fields, and twenty-three hospitals have prepared afternoon clinics and clinical demonstrations.

The registration fee of \$3.00 admits to all features of the Fortnight. A program and registration blank may be secured from Dr. Mahlon Ashford, The New York Academy of Medicine, 2 East 103rd Street, New York.

The American Social Hygiene Association

Announces plans for an extended program of education in syphilis control and social hygiene to reach ultimately 35,000,000 young men and women throughout the nation. These activities, made possible by an anonymous gift of \$25,000, will get under way by October 1. In addition to bringing knowledge of the venereal diseases before youth, it will provide biological information and guidance in preparing young men and women for stronger and more enduring marriage and family relations.

Hopewell Doctors Take Part in Civic Work.

Dr. D. Lane Elder, Mayor of Hopewell since 1920 with exception of one term, was recently re-elected to this office at a reorganization meeting of the City Council. At this time, Dr. S. B. Perry also became a member of the city governing body.

The American Board of Obstetrics and Gynecology, Inc.,

Will hold its next examinations (written and review of case histories) for Group B candidates in various cities of the United States and Canada on Saturday, November 5, 1938, at 2:00 P. M., and on Saturday, February 4, 1939. Application for admission to the written examination scheduled for February 4, 1939, must be filed on an official application form in the office of the Secretary at least sixty days prior to this date (or before December 4, 1938).

The general oral, clinical and pathological examinations for all candidates (Groups A and B) will be conducted by the entire Board, meeting in St. Louis, Mo., on May 15 and 16, immediately prior to the annual meeting of the American Medical Association in June, 1939. Application for admission to Group A examinations must be on file in the Secretary's Office before April 1, 1939.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6) Pa.

Dr. Hugh O. Staley,

Recently at Splashdam, is locating at Richlands, October 1, where he will be connected with the staff of the Mattie Williams Hospital.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are

available to our readers, the only cost being return postage:

Aconite monograph.

Aristotle—Parts of animals, movement of animals, progression of animals.

Buxton, P. A.—Fleas as a menace to man and domestic animals.

Byrne, J. G.—Studies on the physiology of the middle ear.

Caius, J.—A boke or counsell against the disease commonly called the sweate.

Carrel & Lindbergh—Culture of organs.

Carter, J. B.—Fundamentals of electrocardiographic interpretation.

Cathcart & Murray—A dietary survey in terms of the actual foodstuffs consumed.

Clendening, L.—Methods in medicine.

Cole, H. A.—Experiments in the breeding of oysters.

Davis, L.—J. B. Murphy, stormy petrel of surgery.

Elyot, T.—Castel of helth.

Espe, D.—Secretion of milk.

Ewing, A. W. G.—The use of hearing aids.

Feigl, F.—Qualitative analysis by spot tests.

Fenton, C. L.—Our amazing earth.

Fishbein, M.—Medical writing, the technique and art.

Friedenwald, J. S.—Pathology of the eye.

Fulton, J. F.—The physiology of the nervous system.

Galtsoff, P. S.—Culture methods for invertebrate animals.

Gregory—A B C of vitamins.

Hardy, J. A.—Abdominal surgery.

Harrison, G. A.—Chemical methods in clinical medicine.

Hegner, R.—Parasitology.

Henderson, Y.—Adventures in respiration.

Hertzler, A. E.—The horse and buggy doctor.

Horrall, O. H.—Bile, its toxicity and relation to disease.

Hutton, L.—The single woman and her emotional problems.

Industrial Health Research Bd.—Toxicity of industrial organic solvents.

Location for Young Physician.

Request has been received for a young physician to locate at Bacon's Castle, Surry County, Virginia. For further information, write C. M. Pitman, Bacon's Castle, Va. (Adv.)

Home for Convalescences.

A home for the care and treatment of chronic aged and convalescences has been opened at Arrington, Nelson County, Virginia, under the direction of Dr. and Mrs. Fred M. Horsley. Information upon request. (Adv.)

Aid in Medical Research.

Physician having access to a complete Medical Library offers his services to authors or others in locating references, or for medical research of any kind. Reasonable fee. Address "No. 38", care this journal. (Adv.)

Home and School for "Exception" Children.

The Thompson Homestead School, located at Free Union, near Charlottesville, is especially adapted for the shy, nervous, retarded or unsocial child. Enrollment limited. For detailed information, write Mrs. J. Bascom Thompson, Principal, Free Union, Va. (Adv.)

Wanted—

Physician for general medical work in the West Virginia Coal Field. Please give full particulars in first letter. Mail answer to P. O. Box 109, McAlpin, W. Va.

Obituary Record

Dr. Hugh Holmes McGuire,

Prominent physician of Alexandria, died September 8, after a short illness. He was a son of the late Dr. Hunter Holmes and Mrs. Mary Stuart McGuire and was born in Richmond sixty-seven years ago. He graduated from the former University College of Medicine, Richmond, in 1894, and following his internship, located in Alexandria, where he had since made his home and practiced. Dr. McGuire had been a member of the Medical Society of Virginia for forty-four years, and was a fellow of the American Medical and various other organizations. A son, Dr. Johnson McGuire, two brothers, Drs. Stuart McGuire and Hunter H. McGuire, and five sisters survive him, his wife having died several months ago.

Dr. William Beckwith Fuqua,

Prominent Southwestern Virginia physician, died at his home in Radford, August 18, from cerebral hemorrhage. Although he had been in declining health for the past year, he attended his duties during this time and made a call the evening prior to his death. He was born in Fluvanna County, October 9, 1873, and was graduated from the University College of Medicine, Richmond, in 1897. Dr. Fuqua had been in practice in Radford since 1900 and was Chief Surgeon for the Lynchburg Foundry Company for thirty-eight years. He was City Coroner for twenty-five years, a member of the Norfolk and Western Railroad Company Staff, and formerly surgeon for the Glamorgan Company, Virginia Iron, Coal and Coke Company and for the Meade Corporation. Dr. Fuqua was a member of the Southwestern Vir-

ginia Medical Society, Medical Society of Virginia, fellow of the American Medical Association, and was a Mason. He is survived by his wife and two children J. K.

Dr. Isaac Eldridge Huff,

For many years a well-known physician of Roanoke, died on August 17, death being due to pneumonia. Dr. Huff was a native of Floyd County and was seventy-two years of age. His medical education was received at the former College of Physicians and Surgeons of Baltimore, from which he graduated in 1892. For a time he practiced in Floyd County and was a member of that county board of health. He had been a member of the Medical Society of Virginia for over forty years. His wife, a daughter, and two sons, one of them Dr. W. Banks Huff of Roanoke, survive him.

The Great Physician having seen fit to remove from our midst our beloved fellow Physician, Doctor I. E. Huff, we, the members of The Roanoke Academy of Medicine, bow in humble submission to the Divine Will, and extend to the family and friends of Doctor Huff our sincere sympathy in this bereavement.

We wish further to bear the testimony to the sterling worth of Doctor Huff to the profession, and his unflinching kindness and attention to all who suffered.

Signed:

G. M. MAXWELL,
F. A. FARMER,
GEORGE S. HURT,
Committee.

Dr. William Meredith,

Prominent physician of Hanover County, died at his home "Canterbury", September 9, at the age of seventy-three. He graduated from the Medical College of Virginia in 1886 and had practiced in Hanover County for more than forty years, during which time he took an active part in county affairs. Dr. Meredith was for a number of years a member of the Medical Society of Virginia. His wife and seven children survive him.

Dr. Nathaniel D. Morton,

Richmond, died September 10, after a long illness. He was fifty-eight years of age and a graduate of the former University College of Medicine, Richmond, in 1909. Dr. Morton had practiced in Richmond for the past sixteen years, and was for sometime a member of the Medical Society of Virginia. His wife and two children survive him.

RECENT ADVANCES IN THE SCIENCE OF NUTRITION

II. Newer Knowledge of the P-P Factor and the Control of Endemic Pellagra

● The years since 1932, when the P-P factor was known variously as vitamin B₂ or G, have been especially marked by contributions to our knowledge of the anti-pellagic vitamin. Considerable progress has also been made in the treatment of human pellagra as well as in the control of the disease. It might be of interest to review briefly a few of the outstanding developments in this field.

The P-P factor is now accepted as being closely related chemically to nicotinic acid if, indeed, it is not identical with that compound (1). Nicotinic acid has been used successfully in the treatment of human pellagra (2) and there is evidence to support the belief that the P-P factor is intimately associated with essential enzyme reactions in the body (3). A laboratory test has been devised for the early clinical detection of pellagra (4) and there is today better agreement as to the basic dietary requirements for the management of florid pellagra (1).

While the situation as regards endemic pellagra has, in general, shown improvement during recent years, an occasional report indicates that endemic pellagra still constitutes a major medical problem in some localities (5). Authorities agree that the old adage relating to an ounce of prevention being the equal of a pound of cure applies particularly well in the case of pellagra. Consequently, in specific regions of this country certain control measures have been advocated in an endeavor to bring this deficiency disease under permanent control. The most promising of these measures are

the issuance of yeast rations and popular education to the desirability of home production of foods rich in the P-P factor, especially during late winter and early spring. The problem of permanent control of pellagra has been clearly and briefly defined as follows:

"The prevention of endemic pellagra is simple in theory but difficult in practice. If every normal person received enough of the foods containing the pellagra-preventive vitamin there would be no endemic pellagra.—Permanent control can be obtained only by bringing about permanent changes in dietary habits" (1).

The correction of those long-standing dietary malpractices which are responsible for pellagra is certain to be brought about only slowly. The concerted and sustained efforts of all agencies concerned with public health will be required, not only to insure observance of the control measures described above, but also to educate the potential pellagrin to the necessity of a varied diet of protective foods.

Commercially, canned foods may play an important part in the current program designed to bring pellagra under control. Several hundred varieties of canned foods are readily available on every American market at all seasons of the year. Judicious inclusion in the diet of those foods known to be important carriers of the anti-pellagic factor (1) should materially assist in effecting permanent control of endemic pellagra in America.

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(1). 1938. J.A.M.A. 110, 1665.

(2). 1938. J.A.M.A. 111, 584.

1938. Ibid. 111, 613.

1938. Ibid. 110, 289.

(3). 1938. J.A.M.A. 111, 28.

(4). 1938. J. Med. Assn. State of Alabama. 8, 52.

(5). 1938. J. Med. Assn. State of Alabama. 7, 475.

This is the forty-first in a series of monthly articles, which summarize, for your convenience, the conclusions about canned foods reached by authorities in nutritional research. We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.



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VIRGINIA MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

69th Annual Meeting, Medical Society of Virginia, Danville, October 4-6, 1938

Vol. 65, No. 11.
WHOLE No. 1037.

RICHMOND, VA., NOVEMBER, 1938

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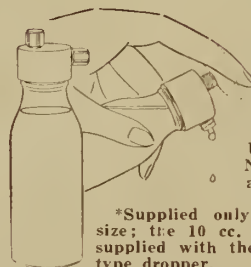
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Virginia Medical Monthly

Official Publication of the Medical Society of Virginia

Vol. 65, No. 11.
WHOLE No. 1037.

RICHMOND, VA., NOVEMBER, 1938

\$2.00 A YEAR
25 CENTS A COPY

A FEW LEAVES FROM THE DIARY OF THAT FAST DISAPPEARING REPRESENTATIVE OF THE GENUS HOMO, THE COUNTRY DOCTOR.*

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MEMBERS OF THE MEDICAL SOCIETY OF VIRGINIA, MEMBERS OF THE WOMAN'S AUXILIARY, LADIES AND GENTLEMEN:

Eight years ago I received at your hands a signal honor. I was made Chairman of the first Public Relations Committee of this Society. Little did I know then that this great honor was only preliminary to the greatest honor which the physicians of Virginia may confer upon one of their number, viz., President of the Medical Society of Virginia. I was deeply appreciative of the first honor and I am sincerely grateful for the second one.

It is natural that you should expect something constructive from me at this particular time and it is natural that I should expect to recommend some constructive steps to be taken.

I recognize the fact that I am addressing both the profession and the laity. In my remarks I shall attempt to keep this constantly in mind.

Julius Cæsar once said of physicians: "They read much, they are close observers, and they look quite through the deeds of men." What he said nearly two thousand years ago is strangely true today. But there is this difference, men have begun to look through the deeds of physicians.

As men look through the deeds of physicians, what do they find? Edward Jenner gave the medical profession small-pox vaccine; Sir Almroth Wright typhoid vaccine; Dr. Behring perfected diphtheria anti-toxin; Reed, Carroll, Lazear and Finlay showed that yellow fever was transmitted by the mosquito. These are only a few of the achievements of scientific medicine. The profession was quick to catch the

torch flung to it by these great men. In my own county for instance, seventy-six cases of typhoid fever with nine deaths occurred in 1913, but in 1929 there were no cases of typhoid fever, small-pox or poliomyelitis; hence, at that time no deaths from those diseases were reported. This was accomplished by the physicians in private practice. Loudoun County has no health officer.

In 1929 there were reported to the State Health Department 853 cases of typhoid fever with 121 deaths; 2,625 cases of diphtheria with 211 deaths; 430 cases of small-pox with one death. The cooperation of civic organizations with the profession of medicine could have prevented most of these deaths and many of the infections.

In 1936 in the State there were 51,924 deliveries; rural physicians delivered 26,279; physicians in cities of 10,000 or more 11,984; midwives delivered the remainder; rural infant mortality was 72.1; mortality in cities of 10,000 or more 79.9 and for the State as a whole 73.9 per 1,000 population. These are interesting and instructive facts. Dr. William C. Woodward of the legal staff of the American Medical Association, during a congressional hearing, was not able to explain them, nor was he able to explain the lower rural death rate.

This brings up the question as to whether rural sections are really suffering from a lack of physicians, or not, and where the supply of physicians is adequate, whether the services rendered are efficient. This last point has just been answered.

According to the medical directory for the year 1934 sixteen counties in the United States had no physicians; nearly all of these counties were isolated. In 1936 there were nineteen. Nearly all of

*Address of the President before the sixty-ninth annual session of the Medical Society of Virginia at Danville, Va., October 4-6, 1938.

the counties without physicians had an average population of about one person per square mile. In 1934 there were three hundred counties located in thirty states in which the population was 2,000 or more per physician, according to the survey made by the Bureau of Medical Economics of the American Medical Association with the assistance of the State Medical Societies in 1936 and published in 1937. The death rate in these counties was less than it was for the States as a whole. This service was rendered by country doctors who received their training in less standardized medical schools. There are no lack of proposals for improving rural medical service but seldom any clear and reasonable proposal as to where and how to improve it; there is, however, a monotonous agreement, that more organizations, hospitals and physicians under government control will solve the problem.

Again looking through the deeds of physicians, one must be impressed with what scientific medicine has accomplished since the days of the early scientists: insulin, the X-ray, sulphanilamide, arspenamine, tetanus anti-toxin, anti-meningococcus serum, the various pneumococcic sera and especially the improved standards of medical education and medical practice. Without these latter, scientific accomplishment would be of but little avail. The people of Virginia should be very grateful for the medical centers in their great cities; they should remember their two splendid medical schools in Charlottesville and Richmond. The patience, intelligence, industry, cooperation, tact, high sense of duty and unwavering loyalty to the precepts and principles of medicine and devotion to the interest and welfare of the people of Virginia, both in the great medical centers and the two medical schools, are a credit to the physicians and the people of the State. Most of us do not realize that more than half of the people of Virginia are economically in a marginal or submarginal state, i.e., they barely make a living or they actually do not make enough to live on.

It has been repeatedly stressed, and it is true, that adequate food, shelter and clothing are inseparable from adequate medical care. The futility of arresting tuberculosis and then sending the patient back to the environment where he contracted the disease is a case in point.

It has been stressed that some physicians and surgeons charge exorbitant fees for their services. It

has not been stressed that patients do not need to employ men of this character; that there are other men just as competent who are reasonable in their charges. It should be made plain that the medical profession deplores this condition and, in due time, will inaugurate regulatory procedures. Already in some institutions this has been done.

Medicine has no brief for its frailties. It is correcting them very rapidly. Over one hundred and fifty experiments are in operation to spread the costs of medical care over longer periods of time and make the charges more equitable.

As we continue to look through the deeds of men we search the deeds of the body politic itself. Its attitude to the profession is most inspiring and reassuring. Based upon intimate contact one with the other, except occasionally, confidence and understanding only issue. Confronted with the choice of the politician or the physician for a friend and counselor, the man in the street chooses the physician. The latter is impelled largely by altruistic motives.

With this mirror before me, which reflects all that has happened in medicine since the days of Hippocrates, I find a final reflection which is arresting. It has never been in the mirror before. Earnest but inexperienced and misguided advisers are wafted by every wind, advocating powers for which in former years men fought. They are quite garrulous and friendly until one asks them a few questions. They have no reply to these questions:

(1) Why should we change our system of practice when (a) the infant mortality (b) cancer death rate (c) tuberculosis death rate (d) diphtheria death rate are less in our country of unsocialized medicine than in those which have it?

(2) Why has Congress been so grossly negligent and wantonly inefficient in the health of the District of Columbia? Can we expect it to care for the health of the nation efficiently if it does not care for the people within its jurisdiction? Statistics show that disease, crime, and especially murder, in Washington, D. C., exceed those rates in almost every city of over 100,000 in population in the United States.

(3) North Carolina, South Carolina, Georgia, Florida, Mississippi, Louisiana, Arkansas, Tennessee, Michigan, Minnesota and Illinois have all repudiated their obligations sometime during their history. That is, about 25 per cent of this country has repudiated its obligations. Is it inconceivable

that the remainder of this nation, i.e., the federal government will not likewise repudiate its obligations under the stress of socialized medicine? Germany has a highly socialized system of medicine. It has repudiated.

(4) Why won't the government tell the people that it frequently loses money in its business ventures?

Here are a few illustrative cases:

U. S. Shipping Board—operating loss 1922-1923 about \$255,000,000.00. Alaska Railroad—Deficit \$8,948,000.00 from 1924 to 1934. Reclamation and Irrigation—payments by water users less than interest on U. S. investment. Inland Waterways Corporation—failed by \$7,000,000.00 to earn interest and taxes on own investment. Federal Farm Board—appropriated \$500,000,000.00 mostly loss.

Recent failures of the American Agriculture Association. Social security—payments by Federal Government had to be stopped to Oklahoma and Ohio for irregularity. Also N. R. A. is a recent failure.

Dr. Persons' conclusion to his study of "Government Experimentation in Business," is this:

"There are very few exceptions to the generalization that state and federal business undertakings have been business failures. That is to say, ventures that were planned to be self-supporting and self-liquidating have, in fact, not been so. Deficits have meant recourse to taxpayers, except in those cases in which states have repudiated debts."

If the government cannot manage its own business, as has been frequently proven, it cannot manage medicine's business. Shall medicine cooperate with the government or hold itself resistantly aloof?

In my opinion it is the duty of every citizen to cooperate and assist his government in every way that he can, legitimately and conscientiously.

The Technical Committee on Medical Care, a committee of experts in the Federal Government, presented, at the suggestion of President Roosevelt, to the National Health Conference held in July of this year at Washington, D. C., the following recommendations:

(1) Expansion of general public health, maternal and child welfare services.

(2) A ten-year construction plan to add 300,000 beds to the Nation's hospital facilities and to provide 300 health centers in areas accessible to hospitals.

(3) The use of public funds to provide minimum

medical care for persons who lack the means to pay for it.

(4) The fourth recommendation which includes the third recommendation and part of the second is for medical care for the entire population, through a combination of the insurance principals with help from general taxation for the lowest income groups.

(5) The application of the insurance principle to the loss of income from temporary and permanent disability.

Shall the medical profession accept these recommendations, or shall they reject them? This, of course, I cannot say off-hand, but I can say this, and in this assertion no one will contradict me. The medical profession will give the fullest, heartiest and most sympathetic consideration to these recommendations, and, when a solution is finally worked out, it will loyally and conscientiously accept it. However, before a solution is obtained it cannot be blamed, since the Federal Government points out its frailties—inefficiencies, derelictions and dishonesties, if it points out the ineptitudes, malfeasances, extravagances and dishonesties of the Federal Government itself. It often happens that men in high places fail to keep their promises, forget their original objectives and talk quite at variance with themselves. With physicians the patient always comes first; the patient will come first now.

Now, what do I recommend to you specifically:

(1) That every county in the State have speakers sent from the nearest medical society to explain in detail what the federalization of medicine means.

(2) That where speakers are unable, or do not wish to make addresses from the facts in their possession, that the Medical Society of Virginia appoint a committee to collect and assimilate facts for the use of these physicians.

(3) That such committee furnish speakers to show the ineptitude and inability of the Federal Government in such an undertaking, so that the people may fully realize what they face.

(4) That the administration of government hospitals treating civilians and manned only by salaried physicians be compared to the administration of municipal hospitals. The Veterans' Bureau offers a good example.

(5) That some plan to meet the present situation be worked out for the State of Virginia.

(6) That the patient be always considered first.

Our interests, after all, must be secondary to those of the people.

As we look through the deeds of men, medicine sees its own errors, its own indiscretions and its own selfishness. It is quite willing, almost eager, to expose every weakness provided it is permitted to display every strength. Can it be blamed if it hesitates to entrust its future to a government which has thirteen million of its citizens on relief? In a country which abounds in natural resources the government finds it impossible, after four years to extricate its citizens even at the expense of over sixteen billion dollars.

The poet says so aptly in this connection:

"Art stoops to conquer while science paves the way." Both the art and science of medicine would gladly stoop to conquer if our government were a science. But it is not. It is scarcely an art. It is a vast seething, bubbling caldron of experiment. Medicine does not presume to say that experiment is not necessary. And so I say to you to night my friends of the medical profession and my friends of the laity—when you are in doubt, at the polls—ask yourself this one question: "In the practice of the Art and Science of Medicine and its economic management, whom do I trust more, 'my politician or my physician?'"

If you will ask yourself this question and answer it honestly, as I know you will, the profession of medicine will continue onward to heights even more exalted than hitherto it has reached; and your children and grandchildren will bless you for what you have done and will continue to hallow and believe in their physicians, especially their family physician.

The most vital force for a good government is a nation of citizens with healthy mental and physical constitutions. No government could long survive if a majority of its citizens were afflicted with diseased bodies and minds. Every man, woman, and child will sooner or later need medical care. They will need that care in the particular location, environment, and under the conditions in which they are living when disease overtakes them. How can medical care be obtained except by personal contact with a physician technically and scientifically trained to render that service? Certainly no government, federal, state, city, or county is prepared, or can be prepared to render such medical service.

It may properly be stated that medical service should be divided into two basic organizations:

(1) Physicians scientifically and technically trained to render personal service to individuals when and wheresoever needed.

(2) Government-Federal, State, City and County—To provide for proper sanitation, adequate water supply, drainage, pure and wholesome food, supervision of industries and mass concentration of citizens when and wherever such assemblies may be necessary. To furnish funds for physicians' use in all forms of epidemics and disasters that may, and do, visit certain localities.

Insurance, voluntary and compulsory, has been extensively tried in many foreign countries, and in the United States in industry. Neither of these has provided satisfactory service to human beings.

Group clinics and hospitals (community and private) as organizations direct their efforts toward educating the citizens to provide necessary funds to equip institutions. Health departments expend large sums for the public health, federal, state and county, compiling a mass of statistics to be used in campaigns for more money, to protect the health of the people. Who furnish the statistics? Physicians, without any compensation (except in the case of examinations made for the protection of the particular organizations writing the insurance against any and all frauds and economic losses). These institutions and organizations make no provision for medical service. No institution, organization, nor even a scientific medical discovery of inestimable value, has, or can take the place of the scientifically trained and legalized physician in rendering adequate medical care to a human being suffering from a diseased body or mind.

In a recent interview, Dr. Thomas Parran, Surgeon General of the United States Public Health Service stated: "We need a great many nurses of a new kind, a combination public health and bedside nurse, to teach our people how to care for their own health, and to minister to them when sick." Up to the year 1912 Loudoun County had few trained nurses. Did the people lack for adequate nursing care? No! A sufficient number of intelligent, splendid women assisted the physicians, and were taught by them, how to care for the sick.

In the year of 1912 the citizens and physicians of

Loudoun County organized and built the Loudoun County Hospital and established a nurses' training school. Many of our local young women took advantage of this opportunity, and today some of them are superintendents of hospitals in this, and other states.

The number of beds provided to care for the citizens who applied for hospital treatment did not meet with the requirements of the United States Public Health Service, the American College of Surgeons, and the State Board of Nurses' Examiners, and the training school was closed. This was done, not in the interest of the citizens of the county, but to further the cause of organized Health Department, organized medicine, and organized nursing control.

What we need in America today is to get back to the idea of initiative and individualism upon which America has grown great. With such a system we have developed a sturdy population which has evolved the best form of representative government known to man, a system that has endured longer than any other democratic system in the world.

What we need is not to encourage the citizen to look to his government for medical care, but to en-

courage thrift and savings so that he may choose his medical care, and thus save America, and particularly our profession, from the effort at socialized medicine, which, serious as is the suggestion, leads to more dire consequences.

Let our profession, in common accord, present a united front on these fundamental questions, remembering that—

We are living in a democracy wherein little men conceal themselves in contentment, big men carry its burdens and aid its progress. The greatest of all physicians, Jesus Christ, founded a new democracy based upon individual responsibility and brought to a troubled world an enduring principle of religious precept.

Civilization has not flowered, it has been arrested in bloom. Conditions are disturbed by the process of evolution and change. Men are restless, soberness is wanting, leadership is required. The opportunity is ours. Will the physicians of the Commonwealth of Virginia rise to the occasion, supply the leadership, present the facts at the bar of public opinion and point the way to a better understanding of the destiny of man?

PIONEERING IN HEALTH—1908 TO 1910.*

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In a previous address† before this Association I spoke of the first and second attempts to establish an official state agency that would actually fight epidemics of disease in Virginia, and apply known measures to abolish the causes of their periodical visits. The third and most highly successful attempt to place the State Board of Health of Virginia on a permanent footing, in keeping with the dignity and importance of the task belonging to it, has also been referred to by me in prepared addresses from time to time. The names and to some extent the records of a few of the truly great men highly instrumental in achieving this result were necessarily woven into the narrative. In the apportionment of honors

through the centuries to come, these Virginia health pioneers should occupy a high place indeed. Their mission was to save life and well did they perform it. The complete roster of that Board of Health, however, composed only of Virginia physicians, upon whom Governor Claude A. Swanson in July, 1908, placed the duty of administering the new law reorganizing the State Board of Health of Virginia has hitherto not been given specific attention. It is an honor roll, indeed.

At this point it is fitting that more than passing mention be made of the Governor of Virginia upon whom the selection of the new State Board of Health fell. If a search of the record be made into the permanent accomplishments during the short terms allotted the administrations of Virginia Governors, I venture to say that the four-year term of Claude A.

*Read before the Southside Virginia Medical Association at Petersburg, June 14, 1938.

†See *Virginia Medical Monthly*, January, 1938—"Early Adventures in Public Health in Virginia."

Swanson of Chatham, Va., from 1906 to 1910 has exceeded all others to date in direct and lasting benefit to the whole people of the State. Without mentioning many other unusually fruitful, statesman-like measures of his term of office, the two acts of Assembly, signed by him, creating, first, the State Board of Public Welfare then the State Board of Charities and Correction, and, second, reorganizing the State Board of Health with the establishment of a Sanatorium for Tuberculosis, would entitle him to the highest distinction as a far-seeing statesman. The intelligent and patriotic discrimination used and the high precedent set by him in the selection and appointment of the boards thus created, mark him as in every respect deserving of the honors his state and his country have awarded him through the years. Long may he live to enjoy them![‡]

The Board of Health under the reorganization consisted of twelve members, one from each of the then ten Congressional Districts and two from Richmond. They were:

- 1st District—Dr. Samuel W. Hobson, Newport News.
 - 2nd District—Dr. Charles R. Grandy, Norfolk.
 - 3rd District—Dr. John B. Fisher, Midlothian.
 - 4th District—Dr. O. C. Wright, Jarratts.
 - 5th District—Dr. Lewis E. Harvie, Danville.
 - 6th District—Dr. Rawley W. Martin, Lynchburg.
 - 7th District—Dr. Samuel P. Latane, Winchester.
 - 8th District—Dr. Wm. Morgan Smith, Alexandria.
 - 9th District—Dr. J. H. Dunkley, Saltville.
 - 10th District—Dr. Reid White, Lexington.
- | | |
|---------------------------|-----------|
| Dr. George Ben Johnston } | Richmond. |
| Dr. Stuart McGuire } | |

No more representative or appropriate group of physicians could have been found within the borders of the State. Dr. Rawley W. Martin and Dr. Charles R. Grandy were the only hold-overs from the old board. Of the whole group three yet survive—that sturdy, active, unexcelled and greatly beloved country doctor, Dr. John B. Fisher, our near neighbor in Chesterfield; Dr. Stuart McGuire, premier Richmond citizen, surgeon, and philanthropist, and Dr. J. H. Dunkley, formerly of Saltville in Smyth County, now and for many years a highly respected citizen and honored physician in the city of Roanoke (and medical director of the Shenandoah Life Insurance Co.). Two of the board, Dr. Samuel P. Latane of Winchester and Dr. O. C. Wright of Jarratts were killed in automobile accidents at the height

of their powers and in the prime of their useful careers.

To cap the wisdom and patriotism shown in the appointment of this Board of distinguished medical men, Governor Swanson then appointed Dr. Ennion G. Williams of Richmond, as Commissioner of Health, to administer the new and comprehensive Health Law and to establish the Sanatorium for Tuberculosis created under it. Dr. Williams had exceptional scientific training in this country and in Europe. He was also equipped with an informed public health conscience, inspired common-sense, and a dynamic zeal. As has been mentioned before, Dr. Williams was responsible in large measure for the proposal and adoption of the act recreating the Board of Health under which he was to work. He was literally drafted from a lucrative and growing specialty of his profession, i. e., X-ray work in which he had won distinction, to assume the heavy responsibility of what he knew would be a laborious life-and-death struggle. All the forces of reaction and ignorance were against him, not only among a people fixed by habit, custom and tradition in wrong health and sanitary practices, but even among the life-saving medical group to which he belonged, a large number of whom—trained in the older different school—took small stock in the ideas underlying the scientific control of infectious disease. It is hard for this generation to believe in the difficulties experienced by public health pioneers, a quarter of a century ago, in the effort to secure the cooperation of those in position of responsibility and power, toward putting into effect what, to us now, are the matter-of-course details of a healthy environment.

Those in charge of affairs then were almost all born and raised in the environment and under the conditions criticized by health officers; most of them were used to swarms of flies in kitchen and dining room, accustomed to the old open well with its slippery oaken bucket and dirty open drain, also the primitive open sewage disposal places, and oftentimes utter absence of cleanliness at stable and dairy barn. None of these conditions were connected in their mind with summer complaint, typhoid fever and with the deaths of their babies, and they were not disposed to change them. These good people, by the grace of God, had come through these dangers apparently unharmed. Their view, frequently expressed, was to let the rising generation take their chances as they themselves had done, and they would

[‡]Hon. Claude A. Swanson, Secretary of the U. S. Navy, 1933—formerly Representative 5th Virginia Congressional District and Senior U. S. Senator.

quote Scripture, "The Lord gave, and The Lord has taken away; blessed be the name of The Lord." Moreover, to do what the health man said would cost money. Life had always been cheap, and money hard to get.

The fight has been a long and hard one and is not won as yet, for it still costs money to prevent disease, and the reactionary is yet with us and has much influence. The advocate of human rights must always battle the money and property standard of the selfish reactionary. Dr. Williams had at his right hand, as his Assistant Commissioner in these early days, Dr. Allen W. Freeman, another Richmonder, who, having graduated in medicine at Johns Hopkins University, entered the preventive medicine specialty as assistant to Dr. E. C. Levy at the Richmond City Health Department. He proved his superior quality quickly in dealing successfully with epidemics of typhoid fever, dysentery, diphtheria, scarlet fever and smallpox, all of which were then seasonal scourges of major proportions. He also prepared much of the public health literature for monthly distribution. For seven years, Dr. Allen Freeman occupied the position of Assistant Commissioner of Health for Virginia. During five of these he also directed the hookworm disease campaign in the State, made possible by the liberality, wisdom, and foresight of Mr. John D. Rockefeller of New York. The experience thus gained by Dr. Freeman in Virginia and afterwards in the United States Public Health Service, and as Health Commissioner of Ohio, eminently qualifies him for the place he holds and has held with great distinction for many years as head of the Department of Public Health Administration in the Johns Hopkins University School of Public Health at Baltimore.

The only other technical assistant to Dr. Williams in his great task was Dr. Meade Ferguson, Bacterologist of the Board. Dr. Ferguson came to Richmond from the Department of Science in the Virginia Polytechnic Institute at Blacksburg. For seven years he directed the State Board of Health Laboratory and personally did most of the work. The laboratory was located in ill-lighted back rooms of the old dwelling, at 1110 Capitol Street, Richmond. Notwithstanding handicaps of location and equipment, by accurate and efficient service, Dr. Ferguson quickly gained the confidence of the medical profession. Under his administration, demands upon the Laboratory multiplied many times. He widely

and definitely sold to the doctors of Virginia the paramount need of laboratory service in the practice of medicine and in the prevention of disease.

Dr. Ferguson resigned from the Health Department in 1914 and has since long and efficiently directed the bacteriological work of the State Department of Agriculture.

This completes the roster of those upon whose wisdom, training and skill in 1908 and 1909 rested the responsibility of lifting the disease burden that then bore so heavily upon the State. Their pay was meagre, and the task difficult beyond expression, but their faith was high and sustaining, and their ability and zeal equal to the job.

With this preface of background, personnel and health-foundation-laying, we can proceed more in detail to what was actually done for health during this period of the newly-reorganized State Board of Health of Virginia. The Board under the leadership of Dr. Ennion G. Williams performed the enormous task assigned it in the establishing of a State Sanatorium for Tuberculosis and beginning its curative and preventive work there.

The place selected for this institution was in the Catawba Valley amid the Alleghany Mountains of Roanoke County on the site of the old Roanoke Red Sulphur Springs. This location had previously, for years, been a summer health resort and watering place. With the example of the successful operation of Trudeau Sanatorium at Saranac Lake in the Mountains of New York State before them, the Board felt that the place selected offered the nearest approach they could find to the ideal conditions then thought essential for such an institution—namely, dry climate, pure water, elevation and seclusion. In addition, there were buildings available that might be adapted for use and save time in getting started.

The natural difficulties to be expected in the construction of a hospital in the woods, eleven miles from the nearest town (Salem) over an unimproved road, were promptly aggravated by the resignation of the highly recommended tuberculosis specialist employed as Medical Director. This physician was unwilling to undertake the task before him in the face of the difficulties at hand and what to him appeared too meagre appropriations for doing it.

Dr. Ennion G. Williams, however, and Dr. Allen W. Freeman, Assistant Commissioner, with the highly efficient assistance of A. Lambert Martin, Clerk of the Board, stuck to the job and overcame

all difficulties as they arose, to such an extent that, on July 15, 1909, one year and fifteen days after the appropriation for the Board of Health became available, the Sanatorium was officially opened for patients with Dr. W. D. Tewksbury, afterwards of the District of Columbia Sanatorium, as Medical Director. Mr. A. Lambert Martin* was appointed business manager of the institution and has remained in that situation through the years since. The development and success of Catawba Sanatorium for tuberculosis is in the largest measure due to the entire devotion of Mr. Martin to Dr. Williams and the plans and purposes of the State Board of Health. His splendid capacity, resourcefulness, and extraordinary ability to cooperate, inspire confidence, and to achieve results, are beyond all praise.

With twenty-eight beds for patients on opening day, the Sanatorium now, February, 1938, has 340 patients and ninety on its waiting list. The wooden open type pavilions of 1909, heated by stoves, have long since given way to closed modern buildings largely of brick construction, steam heated, well-equipped, and answering in every way to the demands of an exacting medical specialty. The naturally beautiful setting in a sheltered mountain cove is trimmed, sodded and landscaped. The well stocked farm and dairy herd is profitably managed and tended and good roads approach it in all directions. All conditions therefore now tend to make of Catawba State Sanatorium not only the haven of hope and health the Board of Health of 1908 dreamed, but deservedly a showplace of that beautiful section of the Commonwealth, the gateway to Southwestern Virginia. The temptation is great to tell, at this point, of the Tuberculosis Commission of 1915 and its report resulting in an intensive educational and tuberculosis case-finding campaign and the establishment of two more sanatoria for tuberculosis sufferers, one with 240 beds at Charlottesville and the Sanatorium for Colored at Burkeville. However, I am trying now to record events in the significant first two years of health work in Virginia, which set the pace for future years of activity during which many public disease-enemies, then rampant in the Commonwealth, were brought under control.

The first concern of the newly created central organization to check disease and promote health was to discover as promptly as possible where infectious

disease in Virginia was to be found. So Dr. Williams immediately set about strengthening and encouraging the local boards of health which had been created under the old State Board of Health, and which had long faithfully, without pay and with little help, struggled with outbreaks of contagious disease whenever they appeared.

Communication by mail was established with these patriotic doctors; postage was furnished them by the Board, so that, without delay and without cost to them, the State Board could be informed, and be able to act before epidemic disease made any progress. A bulletin was issued for free distribution giving the names and addresses of these local boards of health in the State.

A series of bulletins were issued monthly dealing with special diseases, their cause and prevention. The first of these, issued in July, 1908, dealt with the purposes and plans of the Board of Health and pledging at last to do something effective with the information when received. It expressed confidence in the medical profession and in the people of Virginia that full cooperation would be furnished in carrying out its tasks. It gave an outline of what the Board was equipped to do, and touched upon the principal diseases and problems it proposed first to attack such as tuberculosis and typhoid fever. It emphasized the part impure water and flies play in the spread of disease and how to combat their dangers. Dr. E. C. Levy, of Richmond, in a carefully prepared article, stated the principles upon which health work is based, which is yet a model of scientific accuracy. Principles do not change; public health principles are no exception. In August, 1908, the Board of Health published a bulletin which was taken up exclusively with a compilation of the statute law of Virginia relating to the Public Health, citing in its preface extracts both from the Declaration of Independence and from the Constitution of Virginia. The quotation from the Declaration was "Life, Liberty and the Pursuit of Happiness" are declared to be inalienable rights of a citizen. The Virginia Constitution quotation was "of all forms of government, that is best which is capable of producing the greatest degree of happiness and safety." The inference to be drawn from these quotations is fairly clear, that with preventable disease prevailing, life, liberty, happiness and safety are all seriously and unnecessarily endangered. Public support therefore was claimed from every patriotic Virginian

*Mr. Martin died early in October, 1938.

for the work of its Board of Health, for this Board of Health is the official agency set up to insure freedom from communicable disease, thus promoting health and consequently happiness, individual liberty and safety, and, above all and as a natural consequence, the highest degree of public benefit.

In September and October, 1908, the Board's educational bulletins were devoted exclusively to detailed information about the two diseases, typhoid fever and consumption, their causes, methods of spread and the best known ways that people can prevent them from spreading in their neighborhood. The November bulletin was taken up wholly with the proceedings of the third Annual Conference of the Boards of Health of the counties, cities and towns of Virginia. This conference had been instituted several years before by Dr. Paulus A. Irving and Dr. Charles R. Grandy of the old Board of Health, and was greatly helpful in stimulating the interest of Virginia doctors in larger health undertakings.

This third Conference, called by Dr. E. G. Williams and presided over by Dr. Rawley W. Martin, President of the State Board of Health, was held at the Hotel Jefferson, Richmond, Virginia, on October 22, 1908, and a paper on the "Work of A County Board of Health" was presented by Dr. Halstead S. Hedges, Secretary of the Board of Health of Albemarle County, a physician, eminent in his chosen specialty, who yet, as he has for years, stands in the forefront of all community betterment activities in his own county and city. Dr. S. P. Latane, of Winchester, and of the State Board of Health, spoke on the Work of a Town Board of Health, and Dr. E. C. Levy, of Richmond, on the Public Health Work of a City. The Work of a State Department was presented by Dr. E. G. Williams, and was discussed by Dr. H. R. Dupuy, then Health Commissioner of Norfolk, Va., and Dr. Adam Finch, of Chase City, and of the Board of Health of Mecklenburg County. Dr. Charles P. Wertenbaker, a Virginian, of the United States Public Health Service, Captain W. W. Baker, delegate from Chesterfield and patron of the State Board of Health Act, also spoke. The educational value of the instructive addresses made at this meeting and widely distributed and read, greatly helped Virginian people to understand the work done by public health departments and was most fruitful in securing the cooperation needed.

In December, the Control of Diphtheria and Scar-

let Fever formed the subject of a bulletin, and in January the first report of Dr. Williams to the Governor told in brief the story just recorded. The year 1909 saw increased activity in disease control by the State Board of Health, the systematizing of the educational work of the Board in the employment on part time of Dr. D. S. Freeman, of Richmond, a duty previously performed by his brother Allen, and Dr. Williams, between pauses in their activities and travels. No agency ever had a more capable, talented, interested and altogether satisfactory publicity director than Dr. Douglas S. Freeman. His subsequent deserved reputation as a newspaper editor, speaker, author, historian and publicist, is a great matter of pride and satisfaction to those who worked with him and appreciated him in those early years. It is not too much to say that his work in preparing these early bulletins of the State Board of Health, that furnished, monthly, readable, scholarly, and informative literature and regular press reports, did more than any other single factor to gain support for the work by the public throughout the State. One of these early 1909 bulletins was on School Health and Sanitation, prepared by Professor Charles G. Maphis of the University of Virginia, then President of the State Board of School Examiners, and by Professor William H. Heck, of the Department of Education of the University of Virginia, whose untimely death was a great loss to his State. This was followed by a bulletin on smallpox, a most loathsome disease, then a grave problem, but which by vaccination through the cooperation of the school authorities has now almost completely disappeared, and with it the panics and school disorganization caused by its periodic appearance.

Sanitary control of the oyster industry was given attention by the Board in an exhaustive study and report. "The Care of Infants", "Insect Carriers of Disease", and the "Necessity for Pure Water in Town and Country" were made the subjects of timely informative bulletins during the summer months, and in September an interesting illustrated bulletin on "Hookworm Disease, Its Cause, Course, and Treatment" appeared.

In October, 1909, a bulletin was published reviewing the Health Situation in Virginia and a highly creditable report it was. Catawba Sanatorium was running full blast with twenty-eight patients and another pavilion had been authorized to meet, in

some measure at least, the increasing demands for beds.

The Virginia Federation of Labor had put itself squarely on record for the cause of Public Health and pledged the support of its membership in the measures adopted for the control of Tuberculosis and other diseases.

A very advantageous contract had been made for a special price on diphtheria antitoxin, the price for which had hitherto been beyond the reach of people in reduced circumstances, and much information and advice had been disseminated. During this month, the first break in the line of Board of Health membership occurred by the resignation of Dr. Charles R. Grandy, of Norfolk, whose great interest and initiative in the cause of Public Health for Virginia had antedated by many years the Act which put the Board strongly on its feet. A fellow practitioner of medicine at Norfolk, Dr. Stanley H. Graves, was appointed in his stead.

In the month of November following, occurred a most significant public health development, the formation of the Virginia Anti-Tuberculosis Association (now Va. T.B.A.). Following the sessions of the "International Congress on Tuberculosis" held in Washington, committees were appointed from the Medical Society of Virginia, The Virginia Conference of Charities and Corrections (now Conference of Public Welfare) and the State Federation of Women's Clubs, and similar bodies to organize a State Anti-Tuberculosis Association. These committees issued a call for a meeting and on November 6, 1909, met in the offices of the State Board of Health, 1110 Capitol Street, and organized. Dr. W. F. Drewry, of Petersburg, presided, and a constitution was adopted after full discussion. Captain W. W. Baker was elected President, with the following well-known people as Vice Presidents: Judge Wm. Hodges Mann (governor elect), Honorable Claude A. Swanson, retiring governor, Dr. Edwin Anderson Alderman, President, University of Virginia, Dr. E. T. Brady, Abingdon, Bishop Van de Vyver, Richmond, Dr. R. W. Martin, Lynchburg, Dr. Stephen Harnsberger, Catlett, and Mr. John Stewart Bryan, Richmond; Miss Anne Gulley, Richmond, was secretary. On the Board of Directors were Surgeon C. P. Wertenbaker, U. S. Public Health Service, Norfolk, J. T. McGinnis, Radford, Dr. Wm. F. Drewry, Petersburg, Rev. J. T. Mastin, Richmond, Dr. G. W. Wright, Marion, Mrs. J. W.

Hayes, Petersburg, Mrs. D. W. Reade, Keysville, Dr. E. G. Williams, Richmond, Dr. E. C. Levy, Richmond, and Miss Sadie H. Cabaniss, R. N., Richmond. A few days later the Executive Committee chose Dr. Truman A. Parker, of Richmond, Executive Secretary, and the work was begun which since has been so successfully conducted with the aid of the little Christmas Seals—then sponsored by the National Red Cross and called Red Cross Seals.

In a few months, however, Dr. Parker resigned and left the State, and Dr. Douglas S. Freeman was elected in his place. The National Red Cross shortly thereafter relinquished its claim to the little Christmas Seal in favor of the National Tuberculosis Association, and by agreement with that Association the name and insignia of the Red Cross was withdrawn from the Seal. The double-barred scarlet cross of Lorraine was adopted by the National Tuberculosis Association as the emblem of its independent campaign, and through the years since it has made an indispensable place for itself in all local public health and public welfare campaigns.

Throughout the domains of both of these activities of Government, tuberculosis and its blasting effects ramify, and, notwithstanding well laid and measurably successful plans for the destruction of this disease, it still retains its captaincy in the cohorts of death.

Against this perfectly preventable monster effective war on all fronts with well-equipped battalions should unceasingly be waged. Our feeble progress in this war is a continual reproach to our knowledge, our wisdom, our economic foresight, and our humanity.

From a beginning in 1909, with a budget of less than \$2,500 which meagrely paid a part-time secretary, the Virginia Tuberculosis Association now, twenty-nine years later, has a full-time secretary with several office assistants and four divisional field secretaries constantly at work, and, through the medium of these little seals sold at Christmas time, collects and distributes to the local campaigns against tuberculosis throughout the State approximately \$100,000. per year.

If nothing else had been done, in the realm of "Public Health" in Virginia during these two amazingly fruitful years between 1908 and 1910, but the formation and launching of the Virginia Tuberculosis Association, this period would have still de-

served the highest praise from Virginians throughout time.

This generation, who reap the benefit of the devotion of these patriotic men, in its present freedom from the common disease scourges of that day, cannot appreciate fully their debt to them, but they can and should, in gratitude now, actively support state and local health departments in their constant efforts to wipe out completely all infectious diseases not yet conquered. Cooperation of the public alone will bring this desired result.

In view of the foremost part Dr. Ennion G. Williams had in the establishment and conduct of the Virginia State Health Department for twenty-three crowded years, the following tribute—paid

him by a friend several years before his death in 1931—appropriately closes this talk:

ENNION G. WILLIAMS—PATRIOT

He found his native state afflicted sore,
Her towns unkempt, her villages defiled,
Her rural dwellers everywhere beguiled
By rooted custom from the days of yore,
That stubbornly resisted new found lore,
And to the truth of science closed the door.

With steadfast courage and with wise intent,
He swept away traditions rusty bars,
And showed the way his people could prevent
Disease, that everywhere man's visage mars.

O Patriot true! Your state can ne'er repay
The patient years expended in her cause,
But future folk adhering to health laws
Shall know the truth and praise your name away.

PAINLESS CHILDBIRTH MADE SAFE WITH PARALDEHYDE.*

SAMUEL M. DODEK, M.A. (OBS.), M.D.,

Attending Obstetrician, George Washington University Hospital,
Washington, D. C.

Those who have visited St. Andrew Chapel in Westminster Abbey will remember the striking bust of James Young Simpson, under which is inscribed these words: "To whose genius and benevolence the world owes the blessings derived from the use of chloroform for the relief of suffering. Laus Deo".

Ninety years ago, November 28, 1847, this great Scotch physician, the first to receive a baronetcy, successfully demonstrated the possibility of conducting labor and childbirth painlessly with chloroform. His use of this anesthetic agent was denounced as dangerous to morals and religion and Simpson had to fight with great fortitude against the unprecedented prejudice which rose up against him. However, he succeeded and chloroform was accepted as a general anesthetic agent, but the world was slow to concede the justification of its use in childbirth.

The clergy and the medical Tories refused to admit that the travail of labor was pain, and, as such, should be included in the realm of the physician's mission, which is to alleviate pain. Fortunately, the humane crusade has never been completely defeated and always there have been a few among us, especially in America, who, braving the scorn and objec-

tions of our colleagues and the lay press, have pushed on for analgesic and anesthetic agents with the greatest virtues.

The days of 1847 and its chloroform are past and from then to now there has been presented to the physician a confusing panorama of analgesics and techniques to make labor easy. It was my good fortune during the past eight years to become acquainted in a clinical and experimental capacity with many of these preparations and to study graphically their effects upon the contraction of the uterus in labor.

The list included morphine, scopolamine, sodium amytal, nitrous oxide, ether, Gwathmey technique, avertin, paraldehyde, and ethylene. Except for the topic of this paper, morphine and scopolamine combined with inhalation anesthesia for primiparas and sodium amytal and inhalation anesthesia for multiparas gave the best results. Bill, in his recent survey of about 20,000 cases so treated, makes the statement that painless childbirth is no longer in the experimental stage and is just a matter of choice of the most satisfactory and safest agents. Other drugs experimented with caused restlessness, incomplete amnesia, fetal narcosis, difficulty of administration or retention, local irritation, increased postpartum bleeding, etc.

*Read before the South Piedmont Medical Society, Lynchburg, Va., November 19, 1937.

From the Department of Obstetrics and Gynecology, School of Medicine, George Washington University.

Now we have a method of administering a relatively old hypnotic agent, paraldehyde, which gives us the greatest degree of analgesia with the fewest possible disagreeable objections and the widest range of safety.

In 1932 Rosenfield and Davidoff suggested the rectal administration of paraldehyde in combination with the oral administration of ethyl barbiturate (nembutal); and Colvin and Bartholomew soon thereafter combined sodium iso-amyl-ethyl barbiturate (sodium amytal) with paraldehyde in the same technique of administration. We found that, although this technique produced analgesia throughout the period of labor during which it was administered, the combination of the drugs caused considerable restlessness and very often the patients expelled the rectal medication due to the irritating effects upon the rectal mucosa.

In 1932 Doctors Kane and Roth of the School of Medicine of George Washington University introduced the use of paraldehyde alone, the drug being administered rectally in undiluted form except for the addition of a small amount of benzyl alcohol, to serve as a short effectual local anesthetic upon contact with the rectal mucosa, to encourage retention. The technique has been used in well over 3,000 combined cases by Dr. Kane, the writer and others in private and service cases in the past three years, with the final conclusion that the technique gives perfect analgesia; that it causes no asphyxia of the newborn; that it is safe for the mother and not contraindicated in the doses advised in cases of heart disease, hepatic or renal insufficiency, or pulmonary tuberculosis.

Clinically, the duration of labor was definitely not prolonged, the average primiparous labor lasting eighteen hours and multiparous labor twelve hours. Experimentally, Moore and McCurdy, in 1936, using the Dodek external hysterograph, discovered that "In most cases the contractions became more severe and labor proceeded most rapidly at about the time maximum hypnotic effect was obtained." This otherwise excellent method which had brought safe relief to thousands of patients in Washington had several minor objections. It was still somewhat uncomfortable to the conscious patient when first given. Retention did not always occur and it was necessary for a nurse to make pressure for twenty to thirty minutes against the rectum to prevent expulsion. This drawback plus the slowness of absorption,

and the fact that sleep was not always produced when paraldehyde was given by rectum after labor was well established, led to the establishment of the following technique, after the work of Douglas in Baltimore, in the Obstetrical Department of the Hospital of the George Washington University:

Upon admission, the patient in labor is prepared in the usual manner and given several simple soap suds enemas, followed by a rectal irrigation with normal saline solution until the lower bowel is cleansed and the return is clear. As soon thereafter as the patient complains of pain and regardless of the degree of cervical dilatation or obliteration and frequency of the pains, the room is made dark and quiet, and the patient's nostrils are plugged with cotton. She is given one teaspoonful of cracked ice to chew, thus desensitizing the tongue to acute taste, and impairing smell. Twenty cubic centimeters of paraldehyde, mixed with the same quantity of aromatic elixir which have previously been stirred in a glass with a little ice, is offered to the patient to drink. She is then given a small quantity of ice water and the cotton plugs removed.

There is rarely any marked objection to this mixture and many patients remark that the "drink was not bad". Vomiting rarely occurs when the bulk of the medication is not increased by fruit drinks or more water given immediately. Sleep usually overtakes the patient in from five to fifteen minutes in spite of the labor pains and soon the only general manifestations of uterine contractions are some movements of the patient when they occur. If sleep is not profound within a half an hour, morphine, gr. 1/4, may be given, but this is not often necessary. Vaginal examinations and rupturing of the membrane may now be done without fear of arousing the patient or hurting her.

If the patient weighs more than 170 pounds one cubic centimeter of paraldehyde for each additional ten pounds of body-weight, with a similar quantity of aromatic elixir, is added to the basic dose of twenty cubic centimeters of each. As labor proceeds the patient may become wakeful in one and one-half to three hours, but before she becomes restless the analgesia is fortified by the technique of rectal administration of paraldehyde and benzyl alcohol, as follows:

For each ten pounds of the patient's body-weight at the onset of labor, 1.2 cu. centimeters is measured.

To the required total amount of paraldehyde is added 1.5 cu. centimeters of benzyl alcohol, and the mixture is administered by gravity into the rectum by means of a funnel and large catheter which is inserted into the rectum for a distance of about four inches. As the last portion of the solution disappears, it is followed by not more than 30 cu. centimeters of normal saline solution to wash out the catheter and distribute the drug. The time consumed to instill this mixture is rarely more than the interval between two uterine contractions, since the bulk of the injection is so small. There is no tendency for the patient to expel the instillation since she is already unconscious, and sleep and labor continues. The rectal administration may be repeated in the same original dose as often as necessary, the intervals usually becoming prolonged between doses since the effect of each successive injection is more lasting due to accumulation. If several doses are given, a rectal irrigation with normal saline solution should be given before each alternate instillation.

If labor is prolonged and the administration of paraldehyde is continued, dehydration must be avoided. This is done by offering the patient a glass of sweetened fruit juice or plain water before each repeated rectal instillation. If the patient is not sufficiently wakeful, glucose may be administered intravenously. Catheterization is very often necessary since the patient is unable to void due to her unconscious state, and should be performed every eight to ten hours.

As the first stage of labor nears its close and merges into the expulsive second stage, ethylene inhalation anesthesia is sometimes supplemented during each contraction if the patient is wakeful but is made continuous during the actual delivery and preparation for delivery. We deliver our patients operatively, but in some cases, especially in multiparas, it is possible to accomplish the delivery spon-

taneously and sometimes without a general anesthetic.

The induction of labor can be so combined with oral paraldehyde as to make labor absolutely painless. The patient for whom induction of labor is indicated and who is ready for induction (i. e., at term; head engaged; no pelvic abnormality; cervix very soft and not more than two centimeters long and at least three centimeters dilated) is given on admission the usual preparation and sufficient hot soap suds enemata to completely cleanse the bowel. Oral paraldehyde is administered while the patient is still in her room and as soon as she falls asleep she is removed to the delivery room, the membranes ruptured and one or two minims of obstetrical pituitrin are given hypodermically. Labor begins and the patient sleeps through until after delivery.

There is no fetal apnea due to the administration of paraldehyde. However, the newborns are more quiet for the first two days of life than those whose mothers received no analgesics. We have observed no increase in maternal morbidity due to this drug and no mortality.

SUMMARY

Analgesia of whatever type, but particularly paraldehyde, bestows upon the patient complete mental tranquility. She is not frightened by a sense of helplessness during the first stage, the tumultuous and frequent pains of second stage, and she is not alarmed by the sight of the delivery room, the instruments and the uniformed assistants. She enters labor knowing that she will not have to undergo the ordeal she has heard related, and there is no emotional tension to sap her strength and morale. The postpartum recovery begins with a refreshing rest, since the patient often sleeps from two to ten hours after delivery, and she awakens with no horrible memories concerning her labor and is not rebellious against her marital status and future pregnancies.

1835 Eye Street, Northwest.

CURRENT METHODS OF TREATING MENTAL CASES IN VIRGINIA.*

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Richmond, Virginia.

There are approximately 11,000 patients in the hospitals of Virginia for the treatment of mental diseases. Of these all but 700 (the estimated population of the Veterans' Administration Facility and the several private institutions) are being treated in the State hospitals. The first State hospital exclusively for the care of mental cases in America was incorporated in 1768 and opened for the reception of patients in 1773 at Williamsburg. Of necessity this institution was essentially in its earlier days a place of custodial care and perhaps at that time little thought was given to treatment as we understand the term today. The second hospital was opened at Staunton in 1828; the third at Weston (now in West Virginia) in 1859. The fourth was established temporarily at Richmond in 1869, and permanently at Petersburg in 1882, and was the first asylum in America devoted to the care of the negro insane exclusively. The next institution was opened at Marion in 1887, and the last in Amherst County near Lynchburg in 1911. The Legislature of 1938 has just passed an Act establishing a new institution near Petersburg for the care of the colored feeble-minded—to be known as the Petersburg State Colony. The creation of the State of West Virginia of course separated the hospital at Weston from Virginia so that Virginia operates today five institutions for the care of its mentally ill, with a sixth just established and in the planning stage.

The criminal insane are cared for at Marion and at Petersburg. Alcoholic and drug cases requiring hospital treatment are cared for at Staunton. Epileptics and feeble-minded are cared for at Lynchburg.

With the exception of a short period during reconstruction days and a few isolated instances, the State hospitals of Virginia have been free to develop without political interference. Fortunate indeed for the mentally sick it is that the foundations for our modern methods of care were laid by men distinguished for their vision and progressive ideas. Unfortunately the per capita expenditure provided by Virginia today for maintaining and treating these pa-

tients (\$148.19) is lower than that in any of the other states. It is only 40 per cent of the per capita expenditures in Massachusetts and New York and 58 per cent of those in the United States.

Year after year those of us who have been connected with the Virginia State hospitals have called attention and asked for the things which were needed in order to provide modern psychiatric care. Our appeals now have the endorsement and active backing of the recently established State Hospital Board which has demonstrated its interest and earnestness by providing among its first official acts for a comprehensive survey of our mental hospitals. This survey conducted by the Mental Hospital Survey Committee of the National Committee on Mental Hygiene has now been completed and deals in detail with our merits and demerits, calls attention to our needs and makes recommendations which, if carried out, will place Virginia in the forefront of the states in the care and treatment of the insane.

The extent of mental illness and feeble-mindedness outside of the institutions and the program for prevention will not be considered here as I understand it is to be dealt with by other speakers.

Year by year, particularly during the past ten or fifteen years, as we have had the means, we have added to our treatment facilities until today we have generally in each hospital a fully-equipped medical and surgical unit where the physically-ill patient has the benefit of such modern facilities for diagnosis and treatment as are customarily found in general hospitals. A separate department for the reception of patients and intensive treatment of acute mental illness is perhaps the most important unit of the hospital. Here are available facilities for the application of physiotherapy, including hydrotherapy and electrotherapy as well as occupational and recreational facilities.

In discussing the treatment of mental cases it must be understood that all mental diseases may be divided roughly into two general classes, namely, those (1) in which the mental symptoms present are symptomatic of an organic disease or condition and (2) those in which the symptoms represent what we call a functional psychosis.

*Read by invitation before the Virginia Welfare Council, May 6, 1938.

Examples of the former are the mental symptoms resulting from such things as the various infections, including syphilis, tuberculosis, meningitis, etc.; those resulting from alcohol and drugs; those from brain injuries, heart and kidney conditions; those from disturbances of metabolism, growth, nutrition or glandular function; those from new growths such as brain tumors and many others.

Examples of the latter, that is, those of psychogenic origin or those without clearly defined tangible cause or structural change, are the psychoneuroses, such as hysteria and neurasthenia, the manic depressive conditions and dementia praecox which makes up so large a proportion of the hospital population and about which everybody talks so glibly and knows so little.

It is obvious that in the treatment of the first class, that is, the organic conditions in which the cause such as syphilis is known, the treatment resolves itself into the appropriate treatment of the cause. In so far as this is concerned the methods of treatment are largely the same as those employed in the general hospital, supplemented of course, by such precautions as the incidental mental symptoms demand. For example, in syphilis, antisyphilitic measures such as the various mercurial, arsenical and other preparations are administered either by mouth, intramuscularly or intravenously, and the various forms of fever therapy applied by means of malaria, electrothermy, etc.

In tuberculosis, all the measures found useful in general practice for such condition are applied, and so in alcoholism, drug cases, heart and kidney diseases, etc. In those cases permitting therapeutic attack at the hands of the surgeon, a well-equipped surgical suite with the usual auxiliary facilities is available at each of the State hospitals.

When we come to the treatment of the second class of cases which makes up from 45 to 48 per cent of admissions and 70 per cent of the residual population, the time has come to talk of many things and the conversation of Alice in Wonderland between the walrus and the carpenter who discussed crocodiles and cabbages and sealing wax and kings does not exhaust the subjects. These we must consider and many more such as queens and presidents and senators, and pink elephants and monkeys, and Gods and devils and angels and principalities and powers and hosts of other things, and whence came they and

how and when, and most of all why. Because in each case, having first determined by a physical examination that we are dealing with a psychogenic disorder and not a somatic or organic one, it is necessary to make a painstaking mental examination and a study not only of the picture as it appears for the moment but of the life history of the individual extending back to childhood and sometimes to life *in utero* and even before—a vertical as well as a horizontal section if you please. The social and economic conditions and the background, the hopes and the fears which may have been experienced, the psychic traumata which may have been sustained as a child by reason of ignorance or carelessness on the part of parents or teachers, the delusional content and the meaning of it all, must if possible be known.

Yes, these and many other things should be delved into in order to properly evaluate the symptoms which we see. So important is this that I have given the mental examination first place in our methods of treating such cases. So time-consuming is such study and so individualized must it be it is not hard to understand that it is almost impossible for the physicians in the State hospitals of Virginia with its present ratio of doctors to patients to make anything like the complete study which should be made and which is so necessary in understanding the patient and applying the therapeutic measures which give most promise of good results. Our practice in this particular is not to throw up our hands in despair at the enormity of the task but to make as complete a mental study of each case as is possible under existing conditions and chart the course of treatment which seems appropriate.

To understand the aims of treatment of psychotic cases, we may assume that they, by and large, are persons who have “withdrawn from reality to the extent that they have no interest in the affairs of the world outside themselves and whose tendency is to bog down into a purely vegetative existence”.

Depending upon the successful outcome of the various psychotherapeutic measures, individual or group, which we make use of, our patients may be expected to adjust themselves at four different levels: (1) Social Recovery (2) Institutional Social Adjustment (3) Institutional Adjustment, and (4) Deterioration.

May I explain what we mean:

In the first, the patient returns to his home and

makes a reasonably satisfactory adjustment in his work and social life, even though there may be residual scars.

In the second, the patient's recovery is to the extent that in the sheltered environment of the hospital he adjusts to institutional life, is happy, does some responsible work and on the whole is a useful member of the hospital family.

In the third, the patient is able to make only such adjustment as will enable him to get along in the hospital without friction and do some kind of simple work under direct supervision.

In the fourth, or deterioration, the patient seems to have escaped entirely from reality, lives in his dream world, is uncleanly in his habits, and sits all day in idleness—in short, he leads the purely vegetative existence previously referred to.

So our therapeutic aims are to achieve the first result if possible; failing that, the second, then the third, and by all means to avoid the last which is a definite indication of the failure of our methods of treatment. It means that these people—at least those with purely psychogenic disorders—have deteriorated because our methods have not been sufficiently insistent and compelling to keep them in contact with reality even for short periods.

It will not be possible in a paper of this kind to go into details as to the proper application of the various methods of treatment of the individual patient or even of, various groups of patients. Depending upon our judgment as to the possibilities after a careful study, and our judgment as to the requirements of the case, various modifications of psychotherapy are in use to achieve the aforesaid desirable aims and to avoid the undesirable outcome which attends neglect.

A short escape from reality is often good for us, for instance, when we go to the movies or become engrossed in a detective story, or when we sleep, but an indefinite sojourn into that world of imagination or inactivity is pathological. Our mental patient untreated remains in this world of phantasy to which he escaped from an unsatisfying or unbearable environment. He here finds often a world so satisfying that he has no desire and finally no power to return to reality. The psychotherapeutic measures to which I shall presently refer may all be considered as means to again and again snatch the patient from this world of phantasy and to bring him by hook and by crook

again into contact with reality. Little by little he is led to take interest in the things around him and by degrees to assume certain duties and responsibilities.

Among the psychotherapeutic measures employed are training in correct personal habits, physical exercise, such as walks, marching on the wards, calisthenics, dancing, tennis, volley ball, baseball, croquet and such other games as the patient can be induced to engage in. Religious services, community singing, reading, reciting, dramatics, card playing, radio, phonograph, movies and many other such things are useful for certain kinds of patients. Ward house-keeping, including cleaning the floors, windows, bath rooms, dressing the beds, etc., are a part of our efforts to keep certain other patients engaged in some sort of activity.

Formal occupational therapy in which instruction is given in classes ranges from such simple things as winding a ball of cotton and cutting strips of cloth for rug making, to the making of complicated and useful things such as toilet articles, rugs, fancy work, crocheting, caning chairs, basketry, etc. The aim, however, is not to limit occupational therapy to the occupational therapy classroom but to extend it in some form to each ward so that every patient who can possibly be induced to, is engaged in some kind of occupation for at least a part of every day.

The occupational therapy patient may graduate to recovery, failing which he may be promoted to one of the hospital industries, such as dining room and kitchen service, the laundry, the farm, the lawn, the garden, the dairy, the poultry plant, the piggery, the brick plant, the broom, mattress or shoe shop, the carpenter shop, the power plant, the sewing room, janitor work, assistants to the nurse and attendants in the care of other patients and many other things, always remembering to select the patients for such work with the view of using these things for therapeutic purposes rather than for their economic value to the institution, which should be only incidental.

Special psychotherapy based on psychoanalysis is only possible in a few cases, but psychotherapy in the form of attempts to understand the personal problems of the patient, suggestion, and personal encouragement is freely used and often with surprisingly gratifying results. It is here that the doctor and the nurse may often utilize a most valuable technique in dealing with fear, which is frequently a generic factor in mental illness.

Drugs, except as indicated by the physical condition, are of limited use. In recent years, the production of hypoglycæmic shock by the use of insulin has resulted in a certain percentage of recoveries. We are now using this method in several of our hospitals. Metrazol is another drug which we are using at the present time, which promises some benefit. Other special drugs as they promise results are tried from time to time.

The various forms of fever therapy are being used quite extensively, the chief means of producing which are by the various electric appliances, chiefly the inductotherm in which the temperature is easily controlled, inoculation by the plasmodium of malaria, inoculation by the various proteins, etc.

Hydrotherapy is used where indicated and is applied by means of the hot or cold pack, the continuous bathtub, and the various sprays and douches.

A word with reference to chemical and physical restraint. Both—drugs to stupefy, and physical means to restrain—have largely disappeared from all modern hospitals. During the period in which they were in vogue, they were thought indispensable, but without their use there is less excitement, violence and destructiveness experienced and visitors are often surprised and, I am sorry to say, sometimes disappointed that they can hear no screaming and see no wild performance when visiting the hospital.

In conclusion, I may say that the difference between a hospital and an asylum is psychiatric leadership and nursing care. While we employ as many trained graduate nurses as our budget will permit

they are all too few. Those of you who are familiar with state hospital organization know that the hospital attendant is today the most important factor which determines the outcome of the patient's illness. In spite of the physician's careful examination and his kindly counsel, it is the ward attendant who holds the key not only to the door but to the situation. A vindictive and heartless attendant can undo in a moment the doctor's work of a month. A kind and understanding attendant is today the psychiatrist's ablest ally. Believing this to be true, plans are already nearly complete to set up in at least two hospitals a training school where formal instruction is to be given attendants in practical psychiatric nursing care. With a better grade and adequately instructed attendants and more graduate nurses with psychiatric training, I feel that we will be in position to carry out more effectively the various methods of treatment which have been briefly referred to.

Those of us in hospital work in Virginia have been heartened and encouraged by the interest which is being taken by the citizens of the State in the problems of mental hygiene, particularly preventive measures, and we believe there is dawning a brighter day and that the time is not far distant when Virginians will not be satisfied to have it said that the State which originated state care for the insane still provides the smallest amount of money per capita for the care of its wards. With adequate support and sufficient personnel for the care of its mentally sick folks, I am confident we can and will put into effect a system of care of which we need not be ashamed and one fully in keeping with current scientific advancement.

IMPORTANT POINTS TO BE REMEMBERED ABOUT CROSSED EYES—LANTERN DEMONSTRATIONS.*

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The purpose of this paper is not to discuss any new discoveries in regard to crossed eyes, but merely to refresh our minds with certain well-established facts which we all should know. It is not a discussion of minute details, but a presentation of general facts

about which all of us should have knowledge in order to advise our patients intelligently.

Until comparatively recently, little attention had been paid to crossed eyes in children. It was considered by many as an abnormality which would be outgrown. It was thought that nothing should be done about it until the child reached adolescence and

*Read before the Southwestern Virginia Medical Society at Abingdon, Va., April 14, 1938.

demanding that something be done to correct the disfigurement. We failed to realize that irreparable damage was taking place in the sight of the deviating eye and that the psychological development of the child was being retarded.



Before Operation.

After Operation.

Fig. 1.

Note marked internal squint of right eye before operation. The facial expression is entirely changed after operation. A recession of both internal recti muscles was done.

A few decades ago poor vision in one eye was not a severe handicap. Today it is a great handicap and should be prevented if possible. Industry demands of its employees good vision and near physical perfection. Any physical defect lessens chances for employment. Some physical defects cannot be remedied while others can, and should be corrected. Most cases of crossed eyes come in the correctable class of defects, provided treatment is begun early in life. Not only can the unsightly appearance be remedied, but the vision usually can be saved.

To understand the reason for treating crossed eyes in the very young child in order to save the sight, we must recall the development of the child. When the child is born, it has little or no coordination of its members. Its first functions are only those necessary to life, namely, breathing, eating and elimination of waste products. Its hands and feet move about in a haphazard manner, but at the same time the movements mean exercise and development of the muscles. As time goes on, the movements become more coordinated. The child is soon able to grasp objects with its hands. It next learns to move itself about with its hands and feet. Soon it is able to pull itself up by its hands and attempt to stand and walk. The parents of the child, and others, notice

these developments and consider the child as progressing normally or abnormally as the case may be. They often fail to consider the fact that other organs of the body such as the brain, the eyes, and the ears are also developing. The child is using all of its senses to acclimate itself to its environment. Should the development of any one of these senses be retarded, it is our obligation as physicians to stimulate it if possible. It is here that I wish to remind you of the fact that the sight of the deviating eye in a crossed-eyed child is not developing normally and that it requires careful training to force it to develop.

You will no doubt recall from physiology that an image as it passes through the lenticular system of the eye is inverted before being projected upon the retina. Images on the left are projected on the right side of the retina of both eyes and are registered as sight by the right visual centers of the brain. In the same manner images on the right are registered in the left visual center of the brain. It is the function of this portion of the brain by means of its several pathways to fuse these portions of the image into one image. Should there be a deviation of the visual axes of either eye a double image re-



Before Operation.

After Operation.

Fig. 2.

Note extremely odd facial expression which is entirely corrected after operation. Recession of both internal recti muscles was done.

sults. Immediately stimuli are sent to the muscles of the eyes in an attempt to correct the position of the visual axes. Should these stimuli fail to produce their objective, one of two things results. Either there must be two visual images of the same object, thus causing two objects to be seen; or one of the

visual images must be suppressed and the other chosen in order to see one object. As a rule one visual image is clearer than the other and it is this one that is chosen. As the result, the other visual image is not registered in the visual center of the

dormant eye must be used. It may be that when both eyes are again put into use the originally dormant eye is found to be the active eye. This means that its vision is now better than that of the other eye, and it will have to be suppressed while the other is stimulated. The eyes are examined at regular intervals making sure that a balance of vision is maintained until the child is old enough to exercise the eyes to strengthen the weaker muscles. Should exercise fail to balance the muscles, then operation is necessary. Even after operation exercises and fusion training have to be continued over a long period of time in order to maintain fusion and binocular stereoscopic vision.

The treatment of crossed eyes is not a simple task. It requires the cooperation of the parents and the child over a period of months or even years. The parents often become discouraged as progress is slow. They seek sympathy and advice from both the layman and their physician. A word of encouragement and advice from the family physician means a great deal. If their physician will encourage them to carry on, even if they are discouraged, explaining to them the importance of continued treatment, it will



Before Operation.

After Operation.

Fig. 3.

This is a case alternating divergent squint with normal vision in each eye. Note marked external deviation of eyes before operation which is entirely corrected after operation. After six months of fusion training, patient developed binocular stereoscopic vision. Tenotomy of left external rectus muscle was done.

brain as sight, and no more stimuli are sent to the muscles of the eye to correct the visual axes. The visual axes deviate further and a noticeable squint of the eyes results. Since the image is not registered in the respective visual center of the brain, this portion of the brain ceases to develop normally, while the other portion of the visual center develops normally. Should this portion of the visual center be allowed to remain dormant during the important development period of the child's life, which is from birth to about six years of age, it is usually impossible to later stimulate its development. It is therefore very important to cause this portion of the visual center to be stimulated in early life even if the other portion be required to remain dormant at intervals.

There are several ways of stimulating the dormant visual center, one or more of which may be chosen to suit the case. The refractive error in each eye must be determined as accurately as possible under atropine cycloplegia. The proper lens is placed over the dormant eye and usually a plain glass over the other eye. The vision of the active eye is blurred by atropine so that the vision in the dormant eye is the better, and it becomes the active eye. Should this method fail, the active eye is covered so that the



Before Operation.

After Operation.

Fig. 4.

Note that eyes appear to be crossed in Fig. A. In Fig. B the eyes appear straight after narrowing the bridge of the nose by means of the fingers. This is a case of pseudo-squint whose visual axes are parallel but the apparent squint is due to a wide nasal bridge.

be of much benefit to both the child and the ophthalmologist. Remember that most crossed eyes can be straightened by operation at any age, but that the vision in the deviating eye usually cannot be materially improved after seven years of age.

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SYPHILIS IN CHILDHOOD.

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Acquired syphilis in childhood may be the result of sexual relationship but more often is the result of kissing, nursing, or immediate use of drinking cup, spoon, etc., of a person with active primary or secondary lesions, very probably the nurse or mother if she acquired syphilis after birth of child, or some other member of the household. The disease itself presents the same picture as acquired syphilis of adults and the treatment is essentially the same except that technical difficulties due to age of child usually prevent the use of arsphenamine intravenously. Congenital syphilis, on the other hand, presents a rather different problem and this condition is the main concern of this paper.

In the acquired syphilis of adults an infection is superimposed on a probably healthy organism whose defense mechanism stands a fair chance of being in good working order. A different situation is present in the congenital syphilitic whose body is attacked prior to birth and who is thus actually handicapped from the beginning. He not only suffers from the specific infection but he has a background of concomitant lesions of any or all body organs and a more or less generalized toxemia. His chances of death before mobilization of body defenses or adequate treatment can be administered are greater than in adults, and permanent scarring is much more common in children with the possible exception of paresis and tabes. The congenital syphilitic is infected directly from the mother *in utero*. The time during which this is most likely to occur is between the third and seventh months of pregnancy. The blood stream is believed usually to be the source of infection, although Stokes says, "passage of organisms from mother to child by way of placenta and cord perivascular lymphatics is a possible and probably not infrequent route." A woman becoming pregnant while in first or second stage of syphilis is more likely to have a definite syphilitic baby than one in tertiary stage. Women treated vigorously from first or second months of pregnancy stand a good chance of having a baby who, if not entirely free from infection, is at least fairly healthy, without florid luetic signs and easily amenable to treatment. Syphilis, of course, is

a well-known cause of miscarriages, although statements are misleading in this respect, since many women with a positive Wassermann give a history of spontaneous miscarriages which in reality are purposely produced. Syphilis is the main cause of stillbirths and prematurity. Of course, prematurity in itself also lowers the baby's already lessened chances of surviving.

The more heavily infected the baby, the sooner after birth will he show symptoms and the more pronounced these will be. The text-book picture of the florid syphilitic newborn with a wrinkled cachectic look; fissures about mouth and anus; erythematous, pemphigoid, and papulo-vesicular lesions on buttocks, thighs, extremities, and elsewhere; mucous patches in mouth and about anus; hoarse cry and blockage of nasal passages with serosanguineous secretion; enlarged liver and spleen; and claw nails, is recognizable by all. These babies often show soon after birth pseudoparalysis of one or more extremities due to epiphysitis, dactylitis of fingers, onychia, hemorrhage from mucous membrane, especially nose, and signs of meningeal irritation. Their chance is a poor one. Treatment must be instituted, but one must be cautious to avoid death from therapeutic shock. A 50 per cent mortality rate, or higher, within a few days or weeks is to be expected in spite of conscientious treatment. The chief concern in regard to these children is to remember that they are highly infectious to others, i. e., wet nurses, or sisters or brothers who may handle or care for them. We have in our clinic an eleven-year-old-white girl who acquired syphilis from a new born baby—produced by kissing him.

The next broad group might include those babies not quite so heavily infected who may not show definite clinical evidence at birth, but in three to twelve weeks usually will become restless, present feeding difficulties, snuffles, harsh hoarse cry, and possibly inspiratory crow, mucous patches, fissures, condylomata around genitalia, maculo-papular and vesicular syphilids on palms, soles, face and neck, pseudoparalysis, tenderness around elbows, wrists, shoulders and ankles due to osteochondritis, swell-

ing of fingers, inflammation around nails, and an enlarged liver and spleen. Choroiditis is not uncommon and iritis may occur. This is most common around four months of age. These symptoms are similar to but not identical with lesions of secondary stage of acquired syphilis. These cases, if vigorously treated, may survive. Their chances are bettered if diagnosis is made at birth by history, mother's or patient's Wassermann, or skeletal X-ray, etc., and if patient is vigorously treated from birth and *before* appearance of symptoms. If the baby survives this first period of the first few months of life without recognizable symptoms and without treatment, he usually has mobilized enough body defense to carry him through a period of so-called latency and is more likely to terminate with tertiary syphilis around five to eight years of age or, later, around puberty.

The lesions which may be expected at these times are *deformities of permanent teeth*, the typical example being peg-shaped centrally notched front incisors known as Hutchinson's teeth, and the mulberry molars whose four points fold in toward each other; *osteoperiostitis*, especially of tibiae, forearms, and cranium. These lesions may be multiple, symmetrical, either of hyperplastic or necrotic form. Saber shins and frontal bossing are classical signs. There may be associated symptoms of pain and tenderness, worse at night, with late non-inflammatory suppuration and very slow healing. *Arthritis*, especially of the knees, occurs occasionally. It is synovial in character and usually is accompanied by fluid. We have had one typical case in our clinic. *Special senses* are most often affected through occurrence of interstitial keratitis, choroiditis, optic atrophy, and deafness. Interstitial keratitis is one of the most common late manifestations of congenital syphilis and may occur as late as when patient is in his twenties. It accounts for appalling amount of impaired eyesight and partial blindness. *Ulceration and gummatous deposits* with involvement of the periosteum, cartilage and bones, and may give loss of nose bridge with saddle nose, perforation of nasal septum, or perforation of palate. *Central nervous system involvement* is not the rarity we once thought and a good number of congenital syphilitics are potential paretics. All children should have routine spinal punctures within one year after treatment is started. Tabes is very rare. We have never seen a case in our experience. Holt differentiates a form

of cerebral syphilis from true paresis, in which the child, instead of developing normally in mental and emotional behavior and then more or less suddenly presenting symptoms of central nervous system involvement, gives the history of being retarded since birth, restless, disobedient, subject to screaming attacks, headaches and vertigo. These may live for years and are not appreciably helped by any treatment. Our own experiences tend to bear out this distinction in types of central nervous system lues. A goodly number of syphilitic children may be picked up by routine Wassermann examination and no real classical evidence of the disease made out, although there is likely to be a low-grade anemia and generalized enlargement of lymph nodes. They may have deformed teeth which are not typical Hutchinson's teeth. Even when diagnosed in late puberty, these children should certainly be treated as they are still liable to certain late manifestations, mainly interstitial keratitis and paresis. The question as to how contagious these latent luetics are, still gives rise to some interesting discussion. Of course, any specific lesion, such as ulcerating gumma or periostitis, etc., may contain spirochaetes but in absence of these it is strongly to be doubted if these patients are infectious to mates or children. The question of "syphilis of the third generation" is not yet satisfactorily proven to the minds of most of us.

Treatment of congenital syphilis embraces a wide field which properly should include efficient diagnostic technique. Treatment should properly begin with adequate treatment of husband and wife before conception takes place. This would amount to "preventive medicine", and, of course, would shortly and completely wipe out congenital syphilis. The next best thing is to get woman immediately upon pregnancy and treat her energetically throughout. This practically insures either a healthy baby or one easily amenable to treatment. The question comes up as to what to do with pregnant women who have negative Wassermans but in whose history or husband's history there are suspiciously strong evidences of syphilis. Generally it may be said that if the husband can be proven to have syphilis which has not been adequately treated, and was not in tertiary stage upon marriage, the woman should be treated regardless of her Wassermann—at least throughout her pregnancy. The problem also may arise at a later date when a patient delivers a baby whose cord

Wassermann is negative and who presents no visual manifestation of congenital syphilis, but the patient herself gives history of syphilis not adequately treated, or has positive Wassermann. Unless this woman is a latent luetic or has had healthy uninfected children prior to this birth, or has been treated throughout pregnancy, we certainly believe the baby should be treated. Even in the case just mentioned we are running a risk and baby should have skeletal X-ray and blood Wassermann at birth, repeated at monthly intervals for six months, and should be watched carefully for at least a year. We know that 40 per cent of cord Wassermans of proven luetic babies are negative. Also a good majority of these babies may have negative blood Wassermans prior to four months of age, so that these tests if negative do not exclude lues. One of the diagnostic tests of congenital syphilis in very young babies (under four months) is the X-ray picture of long bones and cranium which shows the tell-tale osteochondritis and epiphysitis. A negative Wassermann in the mother also may be misleading since this may be due to a few inadequate treatments at some earlier date, to spontaneous reversal, or to pregnancy itself, so that a careful personal history of the woman and her husband with reference to venereal diseases is indicated in each case of pregnancy.

Statistics showing excellent prognosis for a complete clinical and serological cure of a baby treated vigorously from birth, as compared to children treated at varying later dates, are so conclusive that we feel no hesitancy in urging that these really suspicious babies be carefully but adequately treated during the first year of life rather than observed until actual signs of syphilis make themselves manifest.

In our clinic, treatment of the baby started during first year of life consists in alternating series of intramuscular injections of eight each of sulpharsphenamine .3 gms. per cc. distilled water and bismuth salicylate 10 per cent in peanut oil over a period of one and one-half to two years. No rest periods are given unless made necessary by complications or concurrent infections. The sulpharsphenamine is given on basis of 0.1 gms. per ten pounds body weight—up to .3 gms. At this point the patient is usually old enough to be given intravenous therapy. The dose of bismuth salicylate is 1/4 to 1/2 cc. A blood Wassermann is done at beginning of each new series of sixteen injections. At the end of the treatment period a spinal fluid examination is made for

cell count, globulin, Wassermann and mastic. If blood Wassermann has been negative for at least six months at this time and if spinal fluid is normal, patient is discharged and returns for check up, physical, and blood Wassermann, every six months for several years. If spinal fluid is pathological at this time, special therapy should be instituted for this—preferably malarial therapy followed by other routine treatment. If upon some return visit signs of active syphilis have occurred or blood Wassermann has become positive, patient is given several more treatment series, depending upon particular case, and spinal fluid is reexamined.

Children who do not have treatment instituted until several years of age are given continuous treatment consisting of alternating eight injections each of neosalvarsan in vein and bismuth salicylate in oil in muscle, over period of two years. Neosalvarsan is given .1 gms. per each twenty pounds—up to .45 gms., and bismuth salicylate 1-2 cc. A blood Wassermann is done at the beginning of each sixteen injections. A spinal fluid examination should be made after six months to one year's treatment in these cases so that, if neurosyphilis is present, specific treatment may not be needlessly delayed. If negative, it is not repeated at a later date in ordinary circumstances. The presence of syphilitic lesions, as interstitial keratitis, may of course prolong treatment. The older the child when treatment is commenced, and the more irregular the treatment when instituted, the more difficult it is to obtain a blood Wassermann reversal. Smith states that of a series of 991 patients treated at Harriet Lane, serologic reversal was obtained in 77 per cent of those whose treatment was started under six months of age, the percentage steadily decreasing with increasing age until only 16 per cent were obtained when start of treatment was delayed until eleven to fifteen years. It is observed also that the percentage of Wassermann-fast patients varied with total amount of treatment received during first year rather than on aggregate amount received during whole observation period.

Therefore, if these latent cases are treated for two years with no new evidence of luetic involvement, with bone X-ray negative for syphilis activity, and with a negative spinal fluid, they are put on probation in spite of positive blood Wassermann just as are the Wassermann negative cases, and report back for blood Wassermann and thorough physical every

six months for a good many years. Relapse or progression of activity is four times as common in Wassermann-fast patients as in those who obtain reversal by treatment.

During antiluetic treatment at any age, and following it, patient is given good pediatric supervision with emphasis on general physical condition, teeth, diet, bowel elimination, hemoglobin, etc. He gets a urinalysis at least once a month, and R.B.C. count and hemoglobin at beginning of each series of treatments. At the proper age he is inoculated against diphtheria, is vaccinated, and is advised to be inoculated against pertussis and typhoid. Generally, as to prognosis, we expect a high percentage of serological and clinical cure in those patients diagnosed and treated in first year of life, this proportion steadily decreasing with age. Interstitial keratitis, which is one of our most common late manifestations, is a rather slow one to respond to treatment, sometimes requiring from twelve to fifty injections for relief. However, all lesions respond to treatment clinically with varying but generally satisfying degrees of success, except eighth nerve deafness and neurosyphilis which seem to go their way little disturbed by any form of treatment given.

As to complications due to drug therapy, we are remarkably fortunate in treating children. In our own clinic over a period of five years, during which time we have averaged from fifty to seventy-five treatments a week, we have never had a serious drug reaction. We have had a few cases of mild papular eruption over extensor extremities following neosalvarsan, but without itching. Usually the treatments were discontinued for a while and were later renewed without further trouble. No kidney involvement accompanied these. We have had a fair number of children now and then to complain of nausea or emesis immediately or within a few hours after neosalvarsan was injected. These usually can be traced to desire for hip treatment, or a heavy breakfast and constipation, or coincidental onset of acute colds or other infections. No further developments were seen following these. If complaints of nausea persist, we change drug to mapharsen. We have had one case who developed a cluster of small papular-vesicular lesions on left side of neck at beginning of neosalvarsan series on two occasions. We tentatively diagnosed these as herpes due to arsenicals. Treatment was not discontinued and lesions healed without complications.

As to sulpharsphenamine, mothers occasionally complained of knots in baby's hip at site of injection which eventually absorbed. We had one patient three years old who developed convulsions following several sulpharsphenamine treatments. She came of a family in which there are two paretics and two optic atrophies and she had never been normal mentally. She was hospitalized and tentatively diagnosed as hemorrhagic encephalitis due to sulpharsphenamine. The future course of this patient has led us to doubt that this was a proper diagnosis. She is more probably a central nervous system syphilitic. She has had a series of convulsions since that time. During bismuth treatments, we see a good number of bismuth lines at gum margin and hear scattered complaints of sore hips and knots in hips. We have never had one to abscess. Without respect to the drug being used, a good many patients will, off and on during the course of treatment, show a trace or more of albumin and occasional microscopic blood in urine. The percentage does not seem to run any higher than for a like number of non-syphilitic clinic patients.

A fair degree of secondary anemia is also found in these patients at beginning of and during treatment. This also is comparable to that found in non-syphilitic clinic patients. We do not know how much of this is due to poor and inefficient diet and poor hygienic conditions. We have had two children—both under three years of age—to develop a very definite secondary anemia under drug therapy. They were given long rest periods and iron tonics. One was given transfusions. Both responded satisfactorily. It was noted that the anemia became apparent near the end of their two-year treatment periods.

In conclusion, it may be said that congenital syphilis is a preventable and inexcusable disease. Treatment should begin with adults before marriage and conception take place and should be given the syphilitic woman during pregnancy.

The response to treatment by the actual syphilitic baby is in inverse ratio to the time of onset and severity of symptoms and the promptness and persistency with which he is treated. The results on the whole are remarkably satisfactory with the exception of the cases of *florid* syphilis at time of birth, and of neurosyphilis and eighth nerve deafness.

THE PHYSICIAN'S ROLE IN ADOPTION.

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and

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The physician is frequently brought into the problems of adoption. His patients probably begin by wanting to know the cause of sterility and wanting to have treatments to induce pregnancy. If these treatments have not produced the desired results, the family frequently returns after an interval to ask his advice as to the wisdom or risk of adoption. If they decide to take a child, they will eventually place its physical care in his hands. The physician is, therefore, legitimately concerned that the child they take shall be within the normal group physically and mentally, and of similar mentality and temperament to the family of which he is to become a member. The medical care involved throughout is clearly the physician's function; to find, study and recommend the child belongs in the field of social work.

Another aspect of the problem arises when a patient urgently wishes to be rid of an unwanted child. This happens most often in cases of illegitimacy, where privacy is of great importance. In such cases the physician is called upon not only to deliver the patient, but also he may be urged to dispose of the baby. If he is not careful, he may find himself in as bad a predicament as the patient.

In most states there are legal restrictions in regard to child placement by physicians or private individuals. The Virginia statutes are similar to those in force in most states in this regard. They are found in Chapter 79 of the Code (sections 1935 A to 1935 K of Michie's Code). The provisions may be briefly summarized, as follows:

1. Every agency (defined as individuals, partnerships, voluntary associations and corporations) which receives a child for care, or places a child in another home, or solicits money in behalf of such agency, is required to have an annual license issued by the State Department of Public Welfare.

2. Every agency permitted by law to receive, care for, or place out children is required to keep certain records; to make reports monthly to the Department

of Public Welfare; to visit the proposed home and make an investigation as to its suitability before placing the child, and to visit the child within two months after placement; to enter into a written agreement with the family taking the child.

3. Children may not be brought into the state for purpose of placement; or sent from Virginia to another state for placement without the permission of the State Department of Public Welfare.

4. Boarding homes must be licensed if there are, at any time, three or more children of different parentage, under six years of age, and not related by blood or marriage to the boarding family.

Violation of any part of the statute is declared to be a misdemeanor, and punishable by a fine of not more than \$100.00, or by a jail sentence of not more than one year; or by both fine and imprisonment.

The legal restrictions, however, are not the only deterrents to a private practice of adoption. It is a heavy responsibility to remove a child from his own flesh and blood, to place him with another family where he falls heir to their hopes and ambitions, as well as to their property and family name. Having neither the training nor facilities for such a task, the physician should not undertake it. The best solution of the problem is to call upon a licensed child placing agency for help. In Virginia, the largest agency is the Children's Home Society of Virginia, chartered in 1900, a member of the Child Welfare League of America, with main offices in Richmond. The following material is a statement of its way of handling adoptions:

Every child accepted by the Children's Home Society is placed in a temporary boarding home for study before any permanent plan is made. He is placed with a foster mother who is experienced with young children, who cares for one child at a time and can discuss and work for his development with the social worker and doctor. The child is also placed in the care of a recognized pediatrician and

has stripped examinations once a month during the early months and regularly, though less frequently, later. The birth history and mother's Wassermann are obtained if at all possible. If these are not available, or where in doubt, a Wassermann test is done on the child. Any abnormality is observed and treated. Toxoid is given, and any other medical care that is indicated.

The child's growth is not measured by his height and weight alone. At intervals a trained psychologist tests and observes his strength and skill of muscular coordination, his observation and response, his ability to discriminate and to adjust, using the tests developed by Dr. Arnold Gesell of Yale. These are not an infallible measure of mental ability, but have shown a high degree of consistency in early diagnosis of rate and pattern of development. The first tests are usually given when the child is about three months old, and may be continued at intervals as long as there are fluctuations or difficulties of diagnosis. In general, the older the child is the more accurate is the appraisal and the family can be surer of what they are getting; the younger he is the easier the adjustment for baby and foster parent.

The amount of family history that is available varies from the case of the foundling left on a doorstep, about whose people there is never anything known definitely, to that of the child of a rural family well-known for generations. The former child must be offered to the kind of family who says "we do not care about anything except that it is normally bright and has a negative Wassermann"; the latter can be offered to the kind of family who ask a thousand and one questions. Whatever the agency's belief that a child is healthy, alert, well-balanced and generally promising, it is the agency's hope that no family will take a child of whom they are dubious. There are inevitably risks involved which only confidence can overcome. The family can have honest answers to their questions about a child's ancestors and reach their own conclusions. Virginia is fortunate in having generally a good, substantial stock, and even though a child's parents have not measured up to community standards, he still may have good inherited characteristics from more distant ancestors.

This is not to suggest that a child is only a col-

lection of physical, mental and hereditary traits; his personality traits also are important. These traits are observed and perhaps molded during his months of temporary care. His behavior in relation to difficult new experiences and comfortable old ones, to adventures, fears and affection is noted. From this study a clearer picture results of the child as an individual, and on the basis of that full and rounded knowledge the agency can select a setting where the child is likely to fit.

No child is taken from respectable parents against their will, but if they have decided for themselves to relinquish a child and the agency is willing to accept him, he is then legally committed to the agency. This means that the parents transfer to the agency all of their rights to the child, and the entire responsibility for his care. Foster parents may then deal with the agency without fear of natural parents or relatives. Because of being a state-wide agency the Children's Home Society is able to place a child in a new community, where he has no past but only a future in his new family. In justice to the child, the agency, which is now his guardian, must get well acquainted with the families who are asking to have a child's life entrusted to them. As a part of this study, the family doctor's report as to the health and personality of the foster parents is invaluable.

The child's first year in his new home is an experiment to see whether he and the foster parents can become a real family unit. If the experiment is not successful, it may be ended by either side. If things are satisfactory at the end of a year, adoption papers may be filed and an interlocutory order entered by the court, which becomes final at the end of the second year.

Throughout this process of adoption, the physician's role is one of fundamental importance. It lies within the medical field, which is his specialty; while other factors are the responsibility of the agency which specializes in child placement. Adoptions effected in this way safeguard the interest of all parties concerned and are likely to turn out happily. Certainly a transaction of such far-reaching importance deserves every possible safeguard before it becomes final.

ELEVEN CASES OF TOXEMIA OF PREGNANCY TREATED WITH PROGESTERONE.*

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The treatment of toxemia of pregnancy (no advance has been made in the past twenty years: Carter) is still empirical. The reason for this, as it is with all other diseases whose bacteriology, pathology, or chemistry eludes us, is obvious. Unless the etiology of an affection is known one cannot propose a rational or logical course of treatment.

By the alleviation of or the combating of subjective and objective symptoms presented by our pregnant patients, especially in the last trimester, we are making an attempt to lower the formidable mortality of the toxemias of pregnancy—almost twenty-six per cent of our maternal mortality is accredited to it. If we include those cases whose lives are shortened because of the inevitable aftermaths that follow, we have a real reason for trying every means proffered for its prevention and treatment. At present the best means of prevention is intensive and unrelenting prenatal care, the efficacy of which has been shown so conclusively at Duke University Hospital. As for the actual treatment of this disorder we are still floundering. Magnesium sulphate coupled with the dehydration principles of Arnold and Fay seems to be getting favorable results.

The author has believed for some time that the direct cause of toxemia of pregnancy is a vascular spasm. This has been confirmed by numerous investigators^{1, 3} in the past few years. However, as to the factor or insulting agents causing this spasm and the consequent derangements to the vascular system we are still theorizing. In the final analysis, probably endocrinology will demonstrate the primary cause.

Because of the suggestive investigations of Smith and Smith we have opined that the toxemias of pregnancy have as an underlying cause dysfunction of the placental hormones. Whether this is a primary cause, or whether there is a consequent antihormonal or reciprocal action of other endocrine organs we cannot say, for the literature is most controversial.

It was a statement of Smith and Smith⁶, while

*Read before the Danville-Pittsylvania Academy of Medicine, Danville, Va., January 4, 1938.

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comparing toxemia of pregnancy to menstruation, "The possibility of progestin therapy in late toxemia is . . . appealing", that is the *raison d'être* of this paper.

CASE ABSTRACTS

1. B.G., colored, age twenty-six, four previous deliveries, all normal. Expected date of delivery first week in May. Wass. neg. Physical examination negative except for ulcers on leg which quickly healed under appropriate treatment. First seen March 4, at which time blood pressure was 114/88, wt. 141. April 29, blood pressure had risen to 136/81; wt. 148. Urine neg. Proluton 1 cc. was given on that date and on May 1 and 5. Blood pressure May 6 was 126/80 and on May 13 it was 120/84; wt. had increased only two pounds. Normal delivery May 15.

2. A.R., colored, age nineteen, primipara, single. Expected date of delivery estimated last of July. Wass. neg. First seen July 1. Physical examination neg. Blood pressure 140/80; wt. 142. Proluton 1 unit was given at this time. July 15, blood pressure 150/90; wt. 145; very edematous, showing that there must have been previous hidden edema. Proluton 1 unit on 15, 16, 17, 19, and 20. Edema disappeared. Normal delivery July 22.

3. M.C., colored, age twenty-one, two previous deliveries and one miscarriage. Expected date of delivery October 1. First seen July 8. Physical examination revealed tachycardia. Wass. neg., blood pressure 142/70, wt. 128. B. P. 154/74 on July 15. Proluton 1 unit on July 15, 16, 17, and August 19. On September 19, B. P. 134/80, wt. 135. Tachycardia diminished.

4. C.B., colored, age twenty-two, primipara, expected date of delivery September 24. First seen February 18. Physical examination neg., Wass. neg. July 1, B. P. 144/70, slight trace of alb. Proluton 1 cc. for three consecutive days. September 16, B. P. was 114/76.

5. M.H., colored, age nineteen, two previous pregnancies with a convulsion at each delivery. Expected date of delivery May 30. Physical examination revealed a systolic murmur and thrill at the

cardiac apex. Anemia was treated with good results. First seen March 11. B. P. 148/70, wt. 112. April 22, B. P. 126/70. This increased in one week to 140/80, wt. 119. Proluton 1 unit April 29, May 1, 5, 7, 10, 12, 17, 19, and 20. May 20, B. P. 142/80, wt. 122. Normal delivery May 26. Blood pressure August 3 148/80.

Whether this should be classified as a good result because of the preventing of convulsions is questionable, as we have no assurance that she would have had them.

6. M.B., colored, age twenty-four, primipara, expected date of delivery August 24. First seen August 2. Physical examination revealed a very edematous, toxic looking woman. Complained of severe headache. Blood pressure 136/88, wt. 124, urine 2 plus alb. Proluton 1 unit on August 3, 4, 5, 6, and 7. Blood pressure on August 5 was 158/50. August 26, B. P. 148/92, wt. 127. Did not look toxic and had no complaints. Normal delivery September 3.

7. N.D., white, age twenty-six, five previous pregnancies, convulsions with the first two deliveries. Expected date of delivery August 11. First seen May 18. Retinal vessels spastic; edematous. History of "blind spots". Trace of alb. Blood pressure 170/114, wt. 174. On a toxic regimen symptoms improved, but on June 2, B. P. was 170/120, and she had a large trace of alb. in the urine. Hospitalized. Proluton 1 unit daily for three days brought blood pressure down to 145/90. Edema disappeared. Labor induced medically and ended by a mid-forceps delivery of a normal premature. Blood pressure June 12 was again up to 170/110. The baby died two months afterward.

Although this case appeared to show improvement after administration of proluton we must not forget that she was in the hospital. Rest in bed is of great value in the treatment of toxemias of pregnancy.

8. E.B., colored, age fifteen, primipara, expected date of delivery September 10. First seen April 1; B. P. 116/56, wt. 108. July 22, B. P. 144/70, wt. 126. Proluton 1 unit was given July 22, 26, 27, 28, and 29, at which time B. P. was 120/80; wt. 127. Normal delivery August 18.

9. W.F., colored, age twenty-six, four previous deliveries. Expected date of delivery August 18. First seen April 8. Blood pressure 160/100, wt. 163. Refused induction of labor. Much to our surprise three weeks later the blood pressure was 120/82. June 3, B. P. was 140/90 and there was generalized

edema. She still refused induction. July 1, B. P. was 118/90 but three weeks later it was 144/110. Proluton 1 unit was given on July 22, 23, 24, and 26. July 29 B. P. was 152/120. Induction of labor was accomplished on August 6, after two failures.

Although no specific instructions were given, this patient in some way until the last, as evidenced by the rise in diastolic pressure, was able to take care of the very unfavorable prognosis given when we first saw her. This reminds us of the similar cases cited by Goodall². His patients refused termination of pregnancy and much to everyone's surprise their pathology cleared up. Proluton had no effect at all on the course of case 9.

10. L.J., colored, age twenty-seven, primipara, positive Wass. and under treatment; past history neg. There was a phagedenic ulcer of the vestibule and vagina; part of the urethra had become involved, causing the patient to be incontinent. Expected date of delivery July 24. First seen March 11. Blood pressure 100/60; wt. 124. Pregnancy progressed normally until July 8, when the blood pressure was 138/88. July 15 B. P. was 140/90; wt. 150. Proluton 1 unit was given on the 15, 16, 17, 19, and 20. Normal delivery July 22. At the time she had one convulsion. Immediate treatment with magnesium sulphate probably prevented others.

11. E.D., colored, age twenty-five, two previous normal births, followed by one spontaneous abortion. Expected date of delivery November 11. First seen June 24. Complaining of dizzy spells. Blood pressure 132/58, very slight trace of alb. July 1, B. P. was 152/72, wt. 135, slight trace of alb. Proluton 1 unit August 5, 6, 7, 9, and 10. August 12, B. P. 192/120, large trace of alb. September 2, B. P. 210/120, wt. 145, large trace of alb. Induction of labor September 7; live baby.

To make this a fair test no other treatment was given except the administration of proluton. Labor was induced when the prognosis seemed precarious. Ten of the patients were ambulatory, one was treated while in the hospital. Because of the lack of laboratory facilities this study was necessarily only a clinical one. Blood pressure, because of its variabilities, we realized was a poor criterion for evaluating results, and it was chiefly on the basis of improvement of subjective complaints accompanied by a decrease in the weight gain and decrease in blood pressure that we determined improvement.

We were disappointed with the final results. Out

of the eleven cases, three were absolute failures, two were questionable, six seemed to respond to treatment. The response, though, was no more than we had experienced when using the dehydration principles of Arnold and Fay coupled with rest and strict attention to diet. Also hypodermic medication is painful and expensive.

While completing our study, the work of Robson and Patterson⁴ came to our attention. Using the same treatment in twelve hospitalized cases, they had only one failure; their fetal mortality, however, was 50 per cent. The good results they obtained with the mothers as compared to our only fair results might be explained by the hospitalization of the cases or the differences in the type of toxemia: Shute⁵ very convincingly postulates two forms of the late toxemia of pregnancy. The first and very probably the one most commonly found is what he calls the "pre-abruptio" or those "cases which show a tendency to premature placental separation". These respond to wheat germ oil and, considering the similar action, probably to progesterone. It may be that Robson and Patterson's eleven cases and our six plus two questionable results fall into this form. The other is the true pre-eclamptic. Our three failures were certainly of this latter type. Shute, in a personal communication, says he has tried estrin in eclampsism with results that seemed favorable.

While our study did not produce the dramatic results we had hoped for, it does tend to confirm Shute's classification. Without complete laboratory studies, hormonal too, a true differentiation of the two types cannot be made. However, by close clinical study we may attempt it. The most important sign, we think, in the pre-abruptio type is uterine tenderness; next, marked malaise.

SUMMARY

Eleven cases of late toxemia of pregnancy were treated solely by the exhibiting of progesterone. Six can be classified as good results, two as questionable, and three as failures.

Perhaps progesterone is of value in the pre-abruptio type of late toxemia.

The Proluton used in this study was kindly furnished by Dr. Max Gilbert of the Schering Corporation.

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Masonic Temple.

USE OF INSULIN IN CERTAIN PSYCHIATRIC DISORDERS.*

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Four psychiatric conditions in which insulin has proved to be a valuable therapeutic adjunct are schizophrenia, depressions, acute alcoholism and drug addiction. All of these are seen by every medical practitioner, either for referral or for treatment, and for this reason I shall try to indicate in each condition whether the patient can be treated outside by the private practitioner or whether he can best be treated in an institution.

First, let us consider the insulin-coma treatment in schizophrenia or dementia praecox. Dr. Manfred Sakel¹⁷ of Vienna developed this method for schizo-

phrenics, reporting it first in 1933, after finding that insulin comas benefited the mental and emotional state of drug addicts. In his clinic he reported from 70 per cent to 80 per cent complete remissions with early cases of schizophrenia, compared to the spontaneous remission rate estimated variously from 25 per cent to 50 per cent. In this country the use of the method has spread widely.¹⁹⁻²⁰ Americans do not report as high a remission rate as do the Europeans, but the present consensus among psychiatrists is that insulin therapy has a definite place and value in our therapeutic armamentarium for dementia praecox.^{3, 4, 8, 12, 15, 19, 22}

It is generally agreed that insulin works best with those persons who have been noticeably ill for less

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Read before the Fall meeting of the Virginia, Maryland and District of Columbia Medical Society, November 17, 1937.

than six months or a year, although certain chronic cases are also markedly benefited, either to social recovery or at least to a higher level of adjustment in the hospital. Reports both from Europeans and Americans indicate that one type of case, namely the paranoid, with crystallized delusions of being influenced, controlled or persecuted, are sometimes relieved of their delusions. If this proves to be true, it is important, as these people are difficult to approach in other ways. The acute catatonic and stuporous patients also respond well, but they respond well also to other forms of therapy, such as rest, removal from their usual environment, deep narcosis and psychotherapy.

The method must be carried out in a hospital, and by trained personnel. Dangers inherent in the production of a hypoglycemic coma prevent its being used effectively outside of a hospital without grave risk to the patient.

The method²¹ consists in giving insulin daily, with one or two rest days a week, in increasing amounts until coma supervenes. The insulin is then kept at a coma-producing dose for twenty-five to 100 treatments. The average number is around fifty to sixty. Then the dose is tapered off. The time of termination of the individual comatose state is important. If there is no physical contraindication to continuation, coma is interrupted after one hour or one hour and a half, preferably at a time when the patient is in a state opposite to that of his usual psychosis. That is, an excited patient has his coma interrupted when quiet or vice versa; a paranoid patient when he is in a deep coma and free from delusion.

At this time a preliminary report can be made on six patients who have undergone insulin comas. Four have completed treatment. The first was a catatonic schizophrenic woman of thirty-eight whose illness was less than six months' duration. Narcosis therapy and psychotherapeutic contacts had been tried. She was mute, negativistic, delusional, and tube fed. She improved markedly under insulin. She had fifty-eight injections with twenty-seven comas. She was discharged to her home. She felt ready to return to her job which her illness had made her stop five months previously. She felt better than she had in years. She continued to see a psychiatrist after discharge. It was felt that the course of her illness had been materially shortened. However, in February, 1938, she was admitted to St. Elizabeth's Hospital, again catatonic.

The second patient was a thirty-year-old woman, mute, tube fed, constantly lying in a fetal position. She had an adolescent break, then had gotten married to a very difficult person. For six years before admission she had been incapacitated. She had gone to clinics and had been in other hospitals for several years and was finally admitted to Chestnut Lodge where she had been for one year preceding the beginning of treatment. She had seventy-nine injections with comas. There was no beneficial effect, except improvement in her physical condition.

The third was a forty-four-year-old woman physician, ill for eight years, and continuously hospitalized for the past five years. She exhibited hebephrenic and paranoid features. She had sixty-seven injections, forty comas, and remained the same, unimproved.

The fourth was a thirty-five-year-old paranoid man, who believed himself controlled by radio beams. He had had an acute panic eleven months before insulin treatment and had been hospitalized ever since. He had fifty-one injections, of which twenty-four resulted in comas. By the end of treatment he was markedly improved. His tensions had decreased; he seldom talked of radio beams; he was sociable and cheerful. He returned home.

The two remaining patients are still undergoing treatment. They had been ill six and seven years and have had sixty-one and eighty-one injections, respectively. So far they are unimproved. They will be given metrazol in hopes of changing their status.

To summarize: One patient recovered socially, but relapsed in four months; one was markedly improved so that he could live outside of a hospital; two showed no improvement and two are still undergoing treatment.

The second non-diabetic condition in which insulin is of value is that seen in involutional melancholics and agitated depressions who do not eat well and who are debilitated^{1, 2}. They say they have no appetite, and loss of weight may amount to emaciation. When nursing personnel attempts to urge eating, the patient's negativism shows itself in eating less; if the eating situation is ignored, these patients may eat, but not enough to restore them to a good physical condition.

One treatment is to give these patients insulin two or three times a day before meals, from five to fifteen units an injection. The amount is arrived at gradu-

ally and empirically by increasing the dose to the point when the patient begins to eat adequately.

This treatment is useful not only in the sanitarium but in general practice, providing that the patient is otherwise well enough to be kept at home. Many of these depressed patients, however, need institutional care, particularly on account of their suicidal impulses. Use of insulin for underweight patients is, of course, well known to the profession, and I mention it here only for the sake of completeness.

A third condition is acute alcoholic intoxication¹⁴. Alcoholics are given ten to thirty units of insulin immediately on admission to the hospital. This seems to help them to sober up, to become less jittery, and it acts also as a sedative. The dose may be repeated as often as necessary. In addition, it is well to give a glass of orange juice with one or two ounces of sugar three or four times a day. Orange juice is not given with the insulin, but only after the insulin has had time to have some effect. Patients report most relief after a mild hypoglycemic shock.

Lambert¹⁰ mentions using insulin in acute and chronic barbiturate intoxication along with intravenous glucose in comatose patients. This sounds like a helpful suggestion but we have had no direct experience with it.

The fourth condition in which insulin may be used is for the amelioration of the withdrawal symptoms of the drug addict, very much as it is used in the amelioration of withdrawal symptoms in the acute alcoholic. Certainly these two conditions are very similar psychologically and it is mainly the severity of the personality disorder and social convention which determine whether a man is an alcoholic or a drug addict.

Sakel¹⁶ first reported the use of insulin in treating drug addicts in Vienna in 1930. Merle Howard⁷ reported its use in 1933, apparently independently of Sakel. Various clinicians before Howard and since have reported using insulin in the withdrawal treatment of addicts. These include Modern of Los Angeles¹¹, Hackfield of Seattle⁶, Piker of Cleveland¹³, Chen, Ch'eng and Lyman of Peiping⁵ and others. They all report favorable results, particularly as to the ease and comfort with which withdrawal is accomplished. Sakel emphasized also that the patient's mental outlook changed; that he seemed to become a different personality, one who could cope better with life's strains. He was more receptive to psychotherapy, and less likely to take up the drug

again. Sakel's theories as to how insulin works in respect to schizophrenia and drug addiction are too complex and highly speculative to warrant discussion here.

No other clinicians are as enthusiastic about insulin's favorable after-effects as is Sakel, but they are agreed as to its value in ameliorating withdrawal symptoms. Piker¹³ had mainly police cases, which he could keep for only a few days. Therefore his report of ten cases deals only with the question of withdrawal symptoms.

Howard⁷ reports ten cases with only one recidivist. His cases were mainly from the medical profession and had follow-up rehabilitation.

Chen, Ch'eng and Lyman⁵, working in China, feel that the withdrawal is only a minor part of the problem, and advise occupational therapy, psychotherapy and social rehabilitation as necessary before a drug addict can again function usefully in society.

Kolb and Himmelsbach state that the insulin therapy of drug addicts is valueless⁹. They felt that the good effect which clinicians attributed to insulin was in reality due to the withdrawal itself and always ensues, no matter what the means of withdrawal. They refer to the animal experiments of Stanton who found that in rats addicted to morphine, insulin had no effect on their hyper-irritability on withdrawal nor on their body-weight.

We found insulin treatment useful in ameliorating the withdrawal symptoms of a professional man addicted to dilaudid hydrochloride for five years prior to admission. He was forty-six, high-strung, stubborn, interested in things rather than people and he had never learned to play. He took the drug for relief of pain due to repeated operations on his jaw. These operations left him unable to open his jaw more than two centimeters. He developed fears of not being able to open his jaw when it might be vitally necessary for a doctor or dentist to get into his mouth to remedy some condition, such as an abscessed tooth or a cancer.

He did not know the amount of dilaudid he had been taking, but a four-day preliminary study here showed that he took an average of 10/16 of a grain a day. This is equivalent to about two and one-half grains of morphine. Several times he had attempted gradual withdrawal with the help of a physician and barbiturates. As he approached the point of complete withdrawal, he always became panicky, and found that he had to take even larger doses than be-

fore to keep himself going. So he finally decided to try a sanitarium.

The first four days he was given all the dilaudid he wished. He had one or two ounces of dyno (glucose) in orange juice as frequently as he would take it in order to build up his carbohydrate reserve.

Then dilaudid was withdrawn as follows: The first day of withdrawal he had 7/16 grains, the second, 4/16 grains, the third 1/16 grains and none after that. Whenever he felt a craving for the drug and had used up his quota for that day he was given twenty units of insulin.

The first day he received no insulin, the second, 60 units; the third, 130 units; fourth, 80; fifth, 70; sixth, 110; seventh, 100; eighth, 50; ninth, 70; tenth, 45; eleventh, 75; twelfth, 60; and thirteenth, 30; and thereafter none. He had frequent mild hypoglycemic reactions from the second day on, the last one occurring on the eleventh day. In fact, he reported relief from withdrawal symptoms only after he had had such reactions. For this reason, he was given no food, orange juice nor sugar until he had some insulin reaction as evidenced by sweating, drowsiness and feelings of hunger. For sleep he received phenobarbital and pentobarbital.

A week after beginning of withdrawal he was in splendid condition, felt well, and was himself convinced he no longer had any problems. The physician who was working with him at the time felt that psychotherapy would be facilitated by withdrawal of all medication, including both insulin and sedation. So this was done on the fourteenth day with his cooperation. For a few days he became more restless, particularly at night, but his discussions with the physician became more profitable. He left exactly four weeks after admission to return to his work.

This case is reported not as a result, but simply to show the method by which insulin is used. The only withdrawal symptoms our patient experienced were yawning, weakness and, on the first afternoon of complete withdrawal, some nausea and vomiting. He had no diarrhea, abdominal cramps nor intense pains in his muscles. Due to the insulin he had some facial twitching, perspiring and tremors of his hands. His appetite improved remarkably, whereas before it had been entirely absent.

To summarize the insulin method of treating drug addiction:

1. Preliminary study under satisfying doses of the drug to determine amount being used.

2. Gradual withdrawal with substitution of ten to thirty units of insulin whenever symptoms of craving appear. This is approximately every two to four hours and the twenty-four-hour total of insulin may reach 160 units or more. Let the patient have a mild shock before giving food or sugar. Continue high dosage of insulin for three days to a week, and as withdrawal symptoms disappear, gradually discontinue the insulin, provided appetite and food intake are good. When the patient is taking small amounts of drug, it can be withdrawn abruptly.

3. Give plenty of food, fruit juices with sugar, and chocolate. This guards against overdosage of insulin and also satisfies the addict's craving for sweets during withdrawal.

4. For sleep, give phenobarbital or other barbiturates which are quickly eliminated.

5. After withdrawal comes the most important task, the psychic and social rehabilitation of the patient. Those patients who can be persuaded to consult a psychoanalyst have the best chance for a permanent reorganization of their personality. In addition, placing the recovered addict in a useful role in his community is a great help in preventing return to the use of the drug. However, the psychological and social treatment of drug addiction does not lie in the scope of this paper so I will omit further discussion of that topic at this time.

In conclusion, it is believed that insulin is a valuable therapeutic adjunct in the treatment of certain psychiatric disorders. It appears that insulin in itself does not cure these disorders, but is a means of making more effective other types of therapy, particularly psychotherapy.

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HEMORRHAGE FROM THE UPPER GASTRO-INTESTINAL TRACT—ITS MEDICAL MANAGEMENT—A REVIEW.*

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The management of hemorrhage from the gastro-intestinal tract, especially the upper portion including the stomach, duodenum, and jejunum, has received a great deal of attention in the past few years. The variety of treatments and management of this condition are so numerous that they tend to confuse rather than to clarify the issue. It is the purpose of this paper to review the trend of recent opinion along this line. The scope of the ensuing discussion will, however, be limited for the most part to hemorrhage from the stomach and duodenum.

Cheney¹, in a recent review of gastro-enterology, gives a well-collected series of statistics on the incidence and mortality rates of the various types of lesions. In patients with hematemesis and melena 76 to 77 per cent of these had peptic or duodenal

ulcer; 12.4, neoplasm, and the remaining 12 per cent from miscellaneous causes. Included in this group of miscellaneous causes are those disease entities which secondarily produce some degree of gastro-intestinal bleeding, such as certain pathological conditions of the liver; some forms of heart disease, such as mitral stenosis; some blood dyscrasias, and certain deficiency diseases. It is obviously of essential importance from a clinical and therapeutic standpoint that these be promptly excluded as the probable source of hemorrhage.

The mortality rate from all countries lies between 10 and 20 per cent. It is greater in patients over forty years of age. While bleeding from an ulcer is more common in females, the death rate is higher among males. Surgery has a high mortality rate among the cases of single, acute gastro-intestinal hemorrhage, and, although it was the method of

*Read before the Norfolk County Medical Society, October 18, 1937.

choice in the control of these cases in former years, the trend for the past several years has been toward a more conservative treatment. Yet, in spite of this change the mortality rate has increased during the past five years.

Surgery today is reserved for cases of recurrent bleeding and the chronic, indurated type of ulcer which has eroded into a blood vessel. The patient who has already had one hemorrhage from the G. I. tract is the potential surgical patient, not the patient who is bleeding for the first time, with the exception of a copious hemorrhage which persists unabated beyond all medical means after twenty-four hours. Likewise, recurrent bleeding from marginal jejunal ulceration following a gastro-enterostomy is primarily a surgical problem.

Hematemesis, generally speaking, is more commonly encountered from a gastric ulcer, whereas, melena more often predominates as the result of a duodenal ulcer. Copious, persistent and rapidly progressive hemorrhage more often is the result of the erosion of a blood vessel. As another possible source of bleeding it is not generally appreciated that hemorrhage of moderate—or even severe—degree may be caused by gastritis or gastro-duodenitis, especially in the acute and sub-acute stage, uncomplicated by ulcer. deLaViesca¹, of Leipzig, called attention to this fact in 1935 in discussing copious hemorrhage from the stomach, and placed the incidence of such bleeding at 8 to 10 per cent in relation to all other causes. Anderson, of Denmark, has likewise written on this as a source of hematemesis, melena and occult blood in the stools. If hematemesis alone has occurred, care should be taken to differentiate whether the blood was actually vomited or whether there has been hemoptysis falsely interpreted by the patient. Occasionally, post-nasal bleeding into the pharynx or hemorrhage from the posterior teeth or gums, if persistent, will produce a retching or gag reflex with emesis of varying degrees of blood-stained material which may be somewhat deceptive as to its source of origin if this possibility is overlooked.

If melena alone is present, rectal examination to determine the presence or absence of hemorrhoids, stool examination for occult blood and a proctoscopic examination to ascertain any inflammatory process of the sigmoid or rectum, such as a proctitis or sigmoiditis which may produce bleeding, should be done as soon as possible. The color of the blood passed, whether red or black, is important as a possible clue

as to whether the source of hemorrhage is high up or low down in the intestinal tract. Other causes of melena, such as ulcerative colitis, neoplasm, intestinal tuberculosis, typhoid fever, polyposis, etc., of course, should be considered and ruled out.

The degree of anemia, the blood pressure and the pulse rate, as well as the amount of shock present, are the best guides as to the extent of the hemorrhage. It is wise to remember in regard to the blood count that immediately following a copious hemorrhage the hemoglobin and red cells may be falsely high due to a temporary concentration of the cellular elements of the blood as a result of rapid fluid loss, and such a count should be repeated six to twelve hours later with this in mind.

The determination of the blood urea and blood chlorides should be carried out. It is a well-known fact that some elevation of the blood urea will occur and be present for some days following any extensive hemorrhage from the gastro-intestinal tract. Both of these determinations should be done, especially if vomiting has been present in any amount, because fluid loss with a depletion of chlorides will not only bring about a higher blood pH., but will also cause a decrease of the urinary output with consequent rise of urea following, and a so-called "gastric uremia"¹ may be superimposed upon the original picture. Alsted⁷ has likewise remarked upon the rise in the blood urea following extensive hemorrhage from this part of the body.

All of the various types of treatment advocated have the same common purpose, namely, control and stoppage of the hemorrhage. In many instances rest in bed with mild sedation and some dietary restriction will bring about an arrest of the bleeding. In others it will cease spontaneously. In a certain percentage of cases, however, a fatal outcome is the end-result, and it is especially toward this group that active and well-supervised therapy is directed and carried out upon all cases of G. I. hemorrhage.

Physiologically, the purpose of treatment is to effect the formation of a clot over the bleeding point, and, once formed, the subsequent preservation of this plug from digestion and destruction. In the light of recent work, control of the hemorrhage would appear to depend more largely on the preservation of the clot than upon its actual formation. Within the stomach the following factors tend to prevent both the formation and preservation of a permanent clot:

1. Peristaltic or mechanical movement.
2. Elevation of the gastric acidity from accumulation of gastric acid.
3. Digestion by gastric enzymes.

Stoppage or cessation of the hemorrhage by the use of drug, snake venom, foreign protein injections and whole blood injections have not, on the whole, proved satisfactory. The use of epinephrine by mouth as a local hemostatic is not efficacious due to dilution and inactivation by the stomach contents.

The trend of present medical treatment is along two basic principles:

1. Putting the stomach and duodenum at complete rest from all mechanical movement and digestive functions.
2. Control of gastric acidity.

That this last principle is now an important consideration in the treatment is shown by the high percentage of cases with hematemesis and melena who exhibit hyper-secretion of acid. This has been reported to be as high as 90 per cent¹.

Generally, the type of treatment recommended by Smithies², or some modification of this, is perhaps the most widely known and commonly used. The immediate therapy is morphine in large doses, hypodermically, repeated in one to two hours, if necessary. Feeding by mouth in all its aspects is strictly forbidden, nourishments and fluids being supplied by the usual parenteral routes. The foot of the bed is elevated and local application of heat on the abdomen is advised in preference to cold, such as ice, as the use of the latter is thought to be detrimental. Dobreff³, from experiments made through an artificial gastric fistula, concluded that the application of an ice bag over the abdomen resulted in an increase of peristalsis sometimes accompanied by hyperemia and increased secretion. Eustermann⁴ likewise believes that the application of heat is superior to that of cold, but feels that neither of these has much effect on the intragastric temperature. If vomiting is present in large amount, or if blood clots are being expelled, gastric lavage with normal saline solution at a temperature of 110 degrees F. is recommended, as the heat of the lavage solution acts as an excellent hemostatic. Nothing is given by mouth except sips of hot water for forty-eight hours after all evidence of bleeding has ceased. For controlling the hemorrhage from a spurter Cheney employs 20 c.c. of a 5 per cent solution of calcium chloride, intravenously. If this fails to bring about the desired result, immediate trans-

fusion with whole citrated blood is given. X-ray is not advised until three to four weeks are allowed to elapse after all evidence of bleeding has ceased.

A recent radical departure from the above type of régime is that of Meulengracht, of Copenhagen^{5, 6}. In 1933 he first reported the feeding by mouth of patients with hematemesis and melena from the first day after their admission to the hospital. In 1935 he reported a series of 251 cases treated by this method with a mortality rate between 1 and 1½ per cent. There were three deaths after hemorrhage in his series. The patient is fed five times daily on a puree diet of bread, eggs, meat, vegetables, cheese and cereals with all of the food finely ground up in the form of forcemeat. Alkalies, hyoscyamus, and iron are given in conjunction.

The details of the above diet and schedule are as follows:

- 6:00 A. M.—Tea and crustless white bread and butter.
- 9:00 A. M.—Oatmeal with milk, white bread and butter.
- 1:00 P. M.—Dinner: variety of finely pureed food.
- 6:00 P. M.—White bread, butter, meat, cheese and tea.

The patient is allowed to ingest as much as desired. On this treatment blood appeared less persistently in the stools, dyspeptic symptoms cleared up earlier, recovery from shock was more rapid and time of hospitalization was materially shortened.

Gubergritz⁵ repeated Meulengracht's treatments in 1935 on fifteen patients, all of whom had ulcer of the stomach. Despite hematemesis, patients were put on the above dietary régime, or one with a slight modification. Hemorrhage in all cases was checked within three to nine days. There were no deaths. It was this author's experience that intravenous glucose, transfusion and other medication were not as efficacious in controlling these cases as the above therapy. It has been Meulengracht's experience that patients with hematemesis and melena usually die about eight days after the start of the hemorrhage. Consequently, he believes that they die from general exhaustion with complications more often than directly from loss of blood.

In twelve cases out of the series of 251 in which large quantities of blood had been lost, one or two blood transfusions in each of these were given in accompaniment with the oral feeding.

Alvarez believes that the success and rationale of this type of treatment depends largely on the neutralization of gastric acidity. Feeding of this type apparently does not disturb or dislodge the clot.

Woldman⁴, of Cleveland, has reported another type of treatment on a series of twenty-one cases which appears to have some merit. He concluded that in view of the marked success of Meulengracht's feeding of patients with hematemesis and melena, this might still be improved by a method which would furnish a continuous counteraction of gastric acidity, and, at the same time, preclude the possible danger, either imminent or remote, of mechanical dislodgment of the clot by the passage of food through the stomach. Colloidal aluminum hydroxide in 25 per cent solution was administered by gravity drip through an indwelling Levin tube introduced through the nose to the cardiac end of the stomach. The solution was adjusted to flow at the rate of ten drops per minute. It was felt that the danger of possible trauma to the bleeding surface from installation of the tube was at a minimum, since the distal end was no farther than the cardiac orifice, and, also, it was found that the method was equally effective if the lower end reached only to the lower end of the esophagus. During the first twenty-four hours the patient received two ounces of milk and cream every two hours, after which the diet was increased to cooked cereals, gelatin, custard, creamed soups, rice and tapioca pudding. Morphine was not used in this series. In every instance hematemesis ceased promptly with no recurrence of bleeding. There have been no deaths in twenty-one consecutive cases; fifteen of these had duodenal ulcer, four gastric ulcer and two no demonstrable lesion. During this work it was shown that digestion of the fibrin clot with normal gastric juice *in vitro* at 37 degrees C. occurred in one to two hours. When colloidal aluminum hydroxide was added, no digestion had occurred at the end of twenty-four hours. As an added advantage, pepsin is inactive in alkaline or neutral solution. Colloidal aluminum hydroxide is amphoteric and, hence, there is no danger of alkalosis from its continuous administration, and this was confirmed by studies on a CO₂ combining power. There is little or no absorption of aluminum from the gastro-intestinal tract. From the success reported on this small series it would seem that this method deserves further trial and investigation.

It should be noted that the treatment régimes of

both Meulengracht and Woldman are based primarily on the same principles; that of neutralizing gastric acidity, and control of enzymatic digestion, while the former, that of Smithies, is based upon absolute rest of the stomach and intestinal tract with additional contraction of the musculature by the use of morphine.

The question of transfusion is still sharply divided. MacGuire¹ advocates the use of massive transfusion (1000 c.c.) as a means of controlling the hemorrhage. Westermann¹ reports that in a recent study of his own transfusion, it was completely ineffectual in stopping the bleeding. Cheney advocates its use. The consensus of opinion seems to be that while transfusion does not exert a specific effect upon the hemorrhage, it is a necessary and beneficial adjunct to the treatment of certain cases.

There is an important factor to be borne in mind in connection with the blood pressure which is often observed in these patients, and is often a source of some misinterpretation. Where persistent hemorrhage exists there is an accompanying fall of the blood pressure. This drop will be generally proportional to the amount or volume of the blood lost. This decrease in blood pressure is sometimes a source of alarm to some, and an attempt is made to restore the pressure to its original or so-called "normal level" by the administration of drugs or fluids. Such a procedure is entirely erroneous and may lead to disaster through a continuance of the bleeding from a higher blood level. Physiologically, the lowering of the blood pressure is a compensatory mechanism and is mechanically favorable toward cessation of the hemorrhage, and its decrease should not be molested unless it drops beyond a point that is unsafe for the vital process.

The duodenal extract which is being developed by Rivers for treatment of cases of peptic ulcer is still too new for a proper evaluation or consideration in this paper. This extract is prepared from the duodenum and is alleged to promote healing, inhibit the secretion of acid and stimulate the flow of alkaline bile.

From such a review of the various treatments and managements of these cases, it at once becomes apparent that there is no one method applicable to all cases. The treatment for any one case must be individualized to meet the particular problems at hand, and the best therapy will be that which is based upon a thorough knowledge and understanding of the

various factors of pathologic-physiology involved which must be controlled. This paper has attempted a review of these factors as well as the most recent trend of opinion and treatment.

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THE MANAGEMENT OF THE HEART IN PREGNANCY.

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Within recent years the general practitioner as well as the obstetrician and cardiologist have come to realize that the heart during pregnancy deserves some consideration. In what manner does the normal heart behave under stress of pregnancy? Are there structural changes, or merely functional alterations? What effect has pregnancy on the diseased heart? These and other questions have occupied the attention of cardiologists since Mackenzie stressed the importance of ascertaining the status of the normal as well as of the diseased heart in the pregnant women.

The Normal Heart in Pregnancy.—Mackenzie was of the opinion that no changes in the heart or circulation could be detected in the early months of pregnancy. It was only towards the sixth month that the response to effort began to become restricted, as expressed by the onset of breathlessness after a certain amount of exertion which previously had been accomplished with ease. He then noticed that the heart was frequently displaced until the apex beat was pushed out one inch beyond the left nipple line, and upwards to the fourth interspace. After labor he ascertained that the heart swung back into normal position. Mackenzie believed that there was no hypertrophy of the left ventricle.

Concerning the hypertrophy of the left ventricle during pregnancy much has been written. Stengel and Stanton found that there was a slight irregularity in the contour of the right upper margin of the heart, which they believed was indicative

of a slight hypertrophy of the right ventricle. The general belief, however, is that this hypertrophy is not a real one; it is plethoric, which disappears after the woman has been delivered of her child.

It is self-evident that the heart would be required to do an extra amount of work during pregnancy. The weight of the child is a mechanical stress that increases as pregnancy advances. The growing uterus displaces the abdominal organs, compresses the diaphragm, and impedes the movement of the lower lobes of the lungs; and although the subcostal angle is opened out, the lower ribs expanded, and the apical respiratory excursion shows enhanced movement as a compensatory phenomenon—in spite of these various adjustments—the expansion of the lungs is diminished. This applies to pregnant women in some degree in the second half of pregnancy, but especially to primiparae and to pregnancies complicated by hydramnios and twins.

Where the physiological tumor is unduly large, the effect of this pressure is shown by shortness of breath in exertion, and is demonstrated by the presence of crepitations at the pulmonary bases, which disappear in healthy women after a few breaths have been taken. The heart itself is displaced upwards by the pregnant uterus which presses directly on the right ventricle. The circulatory changes include a definite blood plethora which is a physiological response to the increasing demands of the rapidly growing maternal and

fetal tissues. New vessels comprising the placental circulation increase the work of the heart by interposing an additional vascular field, while the pressure effects described above further the peripheral resistance by obstructing the venous return.

The normal heart meets these demands by calling upon its reserve force and the patient may not be aware of any limitations of cardiac efficiency, but some encroachment upon reserve is always made, and the amount increases throughout pregnancy.

The effects of labor are simply those of muscular effort which always imposes a strain on the heart and calls on the cardiac reserve. The strain is light in easy normal deliveries, but may be severe when labor is prolonged or delivery difficult. In all cases the contractions of the puerperal uterus empty and occlude the vessels of the placental site, and thereby inject an additional amount of blood into the maternal circulation unless post-partum hemorrhage occurs or the patient is deliberately bled to prevent plethora.

The volume per minute of the heart increases in pregnancy. The frequency varies. In a well-trained heart the single beat volume grows without affecting the frequency. The blood, collecting outside the heart, increases the frequency by reflex. The systolic arterial pressure must be increased; therefore, the vascular system also is under an increased strain. The peripheral parts are enlarged by the placenta and the large arterial vessels must carry more blood than in the non-pregnant state. The venous circulation is checked by the abdominal pressure at least in the lower extremities.

X-ray examinations show that in at least fifty per cent of normal pregnant women the diameter of the heart is increased 0.7 cm. The volumetric examinations show that the plus volume per minute is increased sixty-one per cent. The dilatation of the heart is a plethoric compensatory one. Volume and pressure are for the heart the same as length and weight of force for skeletal muscle. When the heart is filled with blood, its contractory power increases; only when it is over-taxed it decreases.

At a frequency of seventy the blood ejected systolically is 85 cc. before pregnancy and 108 cc. before delivery. For the whole the difference is forty-four. This means a difference of 1.2 cm. in the length of the diameter. The increased filling

is entirely mastered. The coronary circulation increases with the increased filling of the aorta and the heart muscle is better arterialized. The oxygen consumption of the heart is supplied by increased importation creating the "steady state," which characterizes the efficient muscles from the tired out one. The periphery is supplied with more blood than it is with oxygen. The efficiency of the heart is present as long as the periphery is normally supplied with blood.

Gammeltoft, in 118 cases of pregnancy with no cardiac disturbances, showed an increase in the longitudinal as well as the transverse diameter in twenty-three cases as early as the fourth or fifth months. This increase in diameter becomes more frequent in the sixth or seventh months, when the longitudinal diameter was increased in thirty-nine cases and the transverse in thirty-three. These measurements were taken at a time when the upward pressure of the diaphragm was of no particular consequence. For the same reason no significance was attributed to the diaphragm in the eighth or ninth months. At this time the longitudinal diameter was found increased in sixty-seven out of 118 cases.

Examinations two to four weeks after parturition showed that both diameters had returned to practically normal measures.

The electrocardiogram revealed that R-S gradually decreases until the sixth month of pregnancy, from 12.0 to 9.1. It then rises again, and attains the previous value shortly before parturition. The decrease of R-S was due to an increase of S, and so far as we know this is a means of predominance of the left ventricle. The difference is compensated from the sixth month on.

These electrocardiogram changes indicate that the left ventricle undergoes a sort of hypertrophy in the first six months of pregnancy and that the hypertrophy is compensated in the last months of pregnancy by a proportionate hypertrophy of the right ventricle. Thus, the functional equilibrium of the two ventricles is disturbed in most cases of pregnancy, even in the normal cases.

The view that the heart muscle really undergoes some changes is supported by the fact that the electrocardiographic changes can often be demonstrated a whole month after parturition, while the X-ray changes which, at any rate, largely depend on the

rotation of the heart, disappear relatively soon after parturition.

The first determination on a pregnant woman of the output of the normal heart was made by Lindhard in 1912. This consisted of measuring its minute volume, the amount of blood which passes through the heart in one minute. The curve of the determinations on this woman showed the minute volume to be 3.7 litres in April, 1912. Pregnancy began in January, 1913. The curve showed the minute volume increased to 5.2 litres in May. The woman was delivered in September, after which the minute volume began to fall. It was 4.4 litres in October.

Later, Weiss carried on the work with Lindhard's method. Weiss found a marked increase in the minute volume, varying from 45 to 86 per cent. Gammeltoft found that the minute volume of the heart increases and that the heart action in this manner is increased during pregnancy. The heart action is increased in pregnancy as a result of the increased total volume of blood and the increased minute volume. This would tend to explain the development of hypertrophy and perhaps also of dilatation.

Mitral Stenosis in Pregnancy.—In the prenatal clinic at the Detroit Department of Health, with an attendance of 1,347 new prenatal patients in 1923, there were 151 cases of heart disease, of which five were mitral stenosis. In the Stanford Service in California, mitral stenosis furnishes about .4 per cent of all the cases. Mitral stenosis is not a very frequent occurrence in pregnant women, but is a condition which requires careful handling.

It has been observed that the association of mitral stenosis with pregnancy is particularly apt to bring on heart failure because of the tendency to produce obstruction in the pulmonary circuit by the valvular defect and also by the selective pressure effects of the pregnant uterus. A further study of the patients with mitral stenosis who have developed congestive heart failure during pregnancy without complications or previous failure shows only rare cases that develop failures without evident cause.

It is the feeling among cardiologists that the heart affection which most frequently cause danger in pregnant women is that associated with mitral stenosis following rheumatic fever. However, when the characteristic symptoms are auscultatorily present, the prognosis is not worse than any other heart defect as long as the beat volume is not lowered.

Mackenzie has summarized the situation of mitral stenosis in pregnancy as follows:

1. When ten or fifteen years after the causative rheumatic attack, there is only a presystolic murmur, with no signs of edema of the lungs, and the response to effort is good, then the outlook is favorable. Such an individual can be permitted to become pregnant with a fair assurance of safety.

2. When there is not only a presystolic murmur, but also a diastolic murmur, if the heart is normal in size and not too excitable, and it is capable of a fair response to effort, then pregnancy may proceed. The patient, however, should lead a somewhat restricted life, avoiding especially such effort as brings on breathlessness or palpitation.

3. When even with a short presystolic murmur, and many years after the cessation of mitral stenosis, there is a marked inefficiency of the heart, shown by breathlessness on slight exertion, rapid pulse, or easily excited palpitation, then there is danger in pregnancy.

4. When the heart is large or irritable, and when effort readily induces palpitation and breathlessness, even if there is no diastolic murmur, pregnancy should be forbidden. If, in spite of advice, it has been undertaken, the case should be carefully watched, particular attention being paid to edema of the lungs. If crepitations become persistent after coughing or deep breathing, the advisability of inducing premature labor should be considered. If the percussion note of the lungs becomes impaired, interference is called for.

Myocarditis in Pregnancy.—Fortunately, myocarditis is the least common of heart ailments found in pregnancy—fortunately, because it is among the most dangerous of complications. When the myocardium is definitely damaged, and there is formation and conveyance of stimulation as well as age, contractility is seriously disturbed, and these disturbances—of inflammatory degenerative or sclerotic kind—are diffusely spread over the entire muscle or are limited to parts of the muscular fibers. The physico-chemical structure of the muscular element is injured. Prognosis when pregnancy is complicated with injury of the myocardium is always bad. It should be interrupted as early as possible, and absolutely forbidden in the future.

Aortic Regurgitation in Pregnancy.—The prognosis with aortic regurgitation depends upon the amount of damage to the aortic valves. According

to Mackenzie, if there is no Corrigan pulse, if the heart is not enlarged or if but slightly enlarged, and if the response to effort is good, there is no danger. On the other hand, if there is a forcible apex beat outside the nipple line, a marked Corrigan pulse, and a distinct limitation of response to effort, pregnancy should be forbidden.

Mitral Regurgitation in Pregnancy.—When a mitral murmur is detected in a woman who is pregnant the following points should be considered: 1. The response to effort; 2. The size of the heart; 3. The rhythm of the heart.

If the response to effort is good and the heart is not increased in size, then the murmur requires no further consideration, as in all likelihood it is physiological. If, also, there is an increase in the size of the heart, but no diminution in the response to effort, and if the circulation is well maintained, then pregnancy may be allowed even if there has been a history of rheumatic fever. If the size of the heart is increased and the response to effort is limited, then the case requires careful consideration. It must be determined whether or not the heart muscle has been damaged. If no doubt remains that the heart muscle is damaged, then pregnancy must not be permitted.

Auricular Fibrillation in Pregnancy.—It was Mackenzie's opinion that auricular fibrillation, although not immediately fatal in pregnancy, so weakened the heart—which had an additional strain to bear—that death was hastened in a great many instances. Auricular fibrillation is a bar to pregnancy. Pregnancy should not be undertaken by a woman suffering from this form of heart disease. If the case has advanced to such a stage that it is too late for surgical interference, the patient should be thoroughly digitalized. In all cases, if edema of the lungs, orthopnea, or enlarged liver supervene, pregnancy should be terminated at once.

Prognosis.—If a pregnant woman has definitely been determined to have heart disease, shall the physician allow her to go on with her pregnancy? What are the signs which foretell favorable or unfavorable outcome? The prognosis depends more upon the ability of the heart to carry on its functional activities rather than upon the murmur that one hears through the stethoscope. Pardee has divided pregnant women with heart disease into four classes:

Class I: Into this class are put the women who are able to perform ordinary and useful physical

activity of the usual kind without manifestations of undue fatigue, dyspnea or palpitation. These women may be allowed to complete their pregnancy without the least danger.

Class II-a: Women assigned to this class are able to perform usual normal physical activity, but experience some discomfort in doing so. There is an increase in shortness of breath after climbing stairs, walking against a wind, lifting heavy articles. These patients are fairly well compensated.

Class II-b: These patients are unable to perform the more difficult features of ordinary physical activity without stopping because of fatigue, breathlessness or palpitation. These patients might be classified as being somewhat decompensated.

Class III: This is the definitely decompensated group. They are unable to perform the simplest physical tasks without fatigue, palpitation or shortness of breath.

The patients in Class I can very safely undergo pregnancy without trouble. Those in Class II-a are somewhat less safe, but not definitely so, and the chances are that, in general, pregnancy may not cause much harm to women in this division. Class II-b must be watched very carefully, and many have been found to go through pregnancy without much difficulty. The type of patient in Class III are those who whom pregnancy is a real problem. It must not be permitted, and, if it has already been allowed to take place, it must be interrupted at the earliest possible moment. The mortality is very high, and no chances should be taken with the patient's life.

EVALUATING HEART EFFICIENCY IN PREGNANCY

It is possible for the physician to evaluate the efficiency of the heart of the pregnant woman. Pardee has devised the following methods to determine cardiac efficiency: The patient is made to exercise, standing with feet separated and swinging a ten-pound dumbbell held in each hand from over her head to as near the floor as she can conveniently reach, repeating the movement in about one or two seconds. This swing can usually be repeated twenty times without difficulty, but the patient must be stopped if there is marked flushing or evident dyspnea or distress.

A normal pregnant woman can swing a ten-pound dumbbell twenty times without distress and with only a slight sense of breathlessness. There will be a slight objective dyspnea, the pulse will rise to a rate

of 120 a minute or less, counting for the first ten seconds and multiplying by six. By the end of one minute the respiration will have become normal and the pulse practically so. The pulse should return to normal at the end of two minutes.

If twenty swings of the ten pounds should cause evident distress, as shown by flushing or anxious facies, with a marked dyspnea and pulse rate of twenty-five for the first ten seconds—a rate of 150 a minute—if the dyspnea and pulse acceleration last more than a minute, and the rapid pulse for two minutes or more, then this reaction should be considered excessive. A moderately increased reaction would lie between the two. A patient who has stopped after ten swings because of evident distress and yet shows only a moderately increased reaction should be considered to have an excessive reaction to twenty swings.

The interest in the pregnant woman with heart disease has been evinced only within comparatively recent years. Intelligent management of such cases has reduced the death rate to about 10 per cent. The usual heart remedies should be used to establish and maintain compensation. Over digitalization is dangerous because it induces abortion. When acute pulmonary edema supervenes during labor, it may be controlled with hypodermic injections of morphine sulphate, gr. $\frac{1}{4}$, atropine sulphate, 1/50 gr., and digitalis intravenously in adequate doses. Intelligent cooperation between the obstetrician and cardiologist in every case of pregnancy complicated with heart disease will result in a lowered mortality.

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Public Health Statistics

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The report of the State Health Department's bureau of communicable diseases, as compiled for the month of September, shows the following cases compared with the same month in 1937.

| | 1938 | 1937 |
|-----------------------------------|------|------|
| Typhoid and Paratyphoid | 51 | 77 |
| Diphtheria | 155 | 134 |
| Scarlet Fever | 87 | 58 |
| Measles | 12 | 41 |
| Meningitis | 4 | 6 |
| Poliomyelitis | 5 | 13 |
| Rocky Mountain Spotted Fever..... | 9 | 5 |
| Typhus Fever | 0 | 0 |

FREE ANTISYPHILITIC DRUGS NOW BEING DISTRIBUTED

On October 6, 1938, the State Department of Health announced through a letter to the medical profession that free antisyphilitic drugs would be available on October 10 for the treatment of all cases of syphilis, regardless of the patient's economic status.

Health officers in cities and counties served by a full-time health department have been furnished a supply of drugs for distribution to hospitals, clinics, and private physicians in their respective territories. They have been authorized to distribute these drugs only upon the presentation of the official requisition form which has been provided for this purpose. Physicians practicing in territories not served by a full-time health department have been advised to forward their requisitions to the State Department of Health, Richmond, Virginia.

"NEW DAY" CAMPAIGN

The second campaign of the Department for the showing of the motion picture on pneumonia entitled "A New Day" began October 15. This sound film produced with Hollywood actors and made in the best Hollywood tradition illustrates the newer methods of pneumonia control and has been received enthusiastically by audiences in many sections of the United States. In Virginia alone during the winter months of last year 84,000 pay patrons of the regular motion picture programs viewed it.

The film is sponsored by the U. S. Public Health Service, the Pneumonia Commission of the Medical Society of Virginia, and by the State Department of Health. The Metropolitan Life Insurance Company circulates the film and is in charge of all exhibitional details.

For the present the use of the picture is being limited to the regular commercial programs. Arrangements already completed by the Department indicate that the majority of the theatres in Virginia will cooperate by making use of this ten minute "short".

Personnel Notes from State Health Department.

Dr. John G. McNiel has been appointed Health Officer of the Montgomery County Health District with headquarters at Christiansburg. He succeeds Dr. W. W. Fuller who is enrolled at the Johns Hopkins School of Hygiene and Public Health.

Dr. Willard W. Griggs has been appointed Health Officer of the Dickenson-Wise Health District with headquarters at Norton. He succeeds Dr. G. R. Carpenter, who is enrolled at the Johns Hopkins School of Hygiene and Public Health.

Dr. Eugene B. Shepherd, formerly Assistant Health Officer of the Pittsylvania County Health District, has been appointed Health Officer of that district. His headquarters continue to be at Chatham. He succeeds Dr. B. Randolph Allen, who is studying at the Johns Hopkins School of Hygiene and Public Health.

Dr. Stephen J. Beeken, who for some months has been Assistant Health Officer for the Rockbridge County Health District, has been appointed Health Officer of the Russell-Tazewell Health District, with headquarters at Richlands. He succeeds Dr. V. A. Turner, who is studying at the Harvard School of Public Health.

Dr. Clarence Porter Jones, Jr., has been appointed Assistant to Dr. Robert P. Cooke of the Rockbridge County Health Department.

Book Announcements

Laboratory Manual of Hematologic Technic. Including Interpretations. By REGENA COOK BECK, M.A., M.D., Richmond, Va., Head of the Department of Bacteriology, William and Mary Extension; Pathologist to Stuart Circle Hospital and Director of the Stuart Circle Hospital, School of Medical Technology; etc. With a Foreword by Frank W. Konzelmann, M.D., Professor of Clinical Pathology, Temple University, Philadelphia. W. B. Saunders Company, Philadelphia. 1938. Octavo of 389 pages. Illustrated. Cloth. Price \$4.00.

Notice on this book appears in the Editorial Department.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage: The Investigation of atmospheric pollution.

Jackson, C.—The life of Chevalier Jackson, an autobiography.

Kagan, S. R.—The life and letters of Fielding H. Garrison.

Kerridge, P. M. T.—Hearing and speech in deaf children.

Kling, D. H.—The synovial membrane and the synovial fluid.

Krieger, L. C. C.—Mushroom handbook.

Lipovetz—Applied physiology of exercise.

Luckiesh & Moss—The science of seeing.

MacKee & Cipollaro—Cutaneous cancer and precancer.

MacKee, G. M.—X-rays and radium in the treatment of diseases of the skin.

Madsen, T.—Lectures on the epidemiology and control of syphilis, etc.

Mainland, D.—The treatment of clinical and laboratory data.

Maynard, L. A.—Animal nutrition.

Med. Res. Council—A study of epidemic influenza.

Morse, M. G.—Hospital case records and the record librarian.

Parker, R. C.—Methods of tissue culture.

Partridge, W.—Bacteriological equivalents.

Penrose, L. S.—A clinical and genetic study of 1,280 cases of mental defect.

Petersen & Milliken—The patient and the weather, vols. 2 and 4.

Poucel, J.—Le tabac et l'hygiène.

Sava, G.—The healing knife.

Snodgrass & Peters—An analysis of the results of treatment of early latent, and mucocutaneous tertiary syphilis.

Stevens & Davis—Hearing its psychology and physiology. A symposium on hormones.

Viotor, A. C.—A woman's quest; the life of Marie E. Zakrzewska.

Proceedings of the Medical Society of Virginia

MINUTES OF THE SIXTY-NINTH ANNUAL SESSION OF THE MEDICAL SOCIETY OF VIRGINIA

October 4, 5, and 6, 1938

Danville, Virginia

SCIENTIFIC SESSIONS

Opening Session

Tuesday, October 4, 8:00 P. M.

The Medical Society of Virginia convened for the opening session of its sixty-ninth annual meeting at the Danville Hotel, Danville, October 4, 1938, with Dr. I. C. Harrison, Chairman of the Committee on Arrangements, Danville, presiding. This first session was held in the Elks Club and was called to order by Dr. Harrison at 8 P. M.

An invocation was said by the Reverend Fred R. Chenault, D. D., Pastor of Main Street Methodist Church; and an address of welcome was made by Judge Kerr Morehead Harris, of Danville. At this time the Honorable James H. Price, Governor of Virginia, was presented and spoke briefly.

After general announcements Dr. G. Franklin Simpson, Purcellville, read his President's Address: "A Few Leaves from the Diary of That Fast Disappearing Representative of the Genus Homo, The Country Doctor."

Dr. J. Bolling Jones read the following list of members of the Society who had died within the past year while the audience stood in respect to their memory:

Members of the Society Whose Deaths Have Been Reported Since 1937 Meeting

Dr. Claude Jacob Bradshaw, Carrsville, July 27, 1937.

Dr. Arthur Clayton Sinton, Jr., Richmond, November 6, 1937.

Dr. Joseph Alexander Noblin, East Radford, October 22, 1937.

Dr. Charles Slicer Groseclose, Buena Vista, November 8, 1937.

Dr. Herbert Roney Drewry, Norfolk, December 1, 1937.

Dr. Oliver Allison Ryder, Alexandria, November 27, 1937.

Dr. Edward Massenberg Parker, Emporia, December 16, 1937.

Dr. Robert Roy Hoskins, Mathews, December 20, 1937.

Dr. William Chalmers Wills, Victoria, August 22, 1937.

Dr. C. Leonard Purdy, Brodnax, November 28, 1937.

Dr. Thomas C. Harris, Centralia, December 6, 1937.

Dr. Joseph Peterfield Trent, Farmville, December 27, 1937.

Dr. William Evans, Norfolk, December 26, 1937.

Dr. Charles Louis Rudasill, Richmond, January 13, 1938.

Dr. John Cecil White, Blackstone, December 31, 1937.

Dr. Robert Emmett Chumbley, Radford, December 31, 1937.

Dr. Marshall C. Fields, Chilhowie, October 15, 1937.

Dr. Robert Lee Seward, Isle of Wight, January 31, 1938.

Dr. Robert Rush Goad, Hillsville, January 27, 1938.

Dr. Peyton Stark Lewis, Richmond, March 9, 1938.

Dr. Louis Christian Brand, Kwangju, Korea, February 28, 1938.

Dr. Stark Armistead Sutton, Norfolk, April 1, 1938.

Dr. Joseph Bishop Wolfe, Coeburn, April 6, 1938.

Dr. Fletcher Johnston Wright, Petersburg, May 8, 1938.

Dr. Samuel Thomas Anderson Kent, Ingram, May 23, 1938.

Dr. St. Julien Oppenheimer, Richmond, May 1, 1938.

Dr. Lazarus Karp, Richmond, May 23, 1938.

Dr. Edmund Henry Lewis, Gordonsville, February 4, 1938.

Dr. William Andrew Brumfield, Farmville, May 29, 1938.

Dr. Edward Cary Ambler, Roanoke, July 11, 1938.

Dr. Oscar Clyde Page, Brodnax, July 1, 1938.

Dr. William Lee Gannaway, Abingdon, April 17, 1938.

Dr. Frank Hancock, Norfolk, August 15, 1938.

Dr. Samuel Walthall Budd, Richmond, July 27, 1938.

Dr. Alonzo Augustus Bilisoly, Portsmouth, May 5, 1938.

Dr. James Carter Giles, Danville, July 29, 1938.

Dr. Hugh Holmes McGuire, Alexandria, September 8, 1938.

Dr. William Beckwith Fuqua, Radford, August 18, 1938.

Dr. Isaac Eldridge Huff, Roanoke, August 17, 1938.

Dr. John L. Nall, Danville, September 30, 1938.

The President introduced Dr. William J. Mallory (invited guest) of Washington, D. C., who read his paper entitled: "The Diagnostic Value of the Clinical Aspects of Digestive Diseases."

The program having been completed, the evening session adjourned.

Medical Section

Wednesday Morning, October 5

The Medical Section met in the ballroom of the Danville Hotel and was called to order at 9:25 o'clock, A. M., by Dr. Alex. F. Robertson, Jr., Staunton, President-Elect.

Dr. Oscar L. Hite, Richmond, read his paper entitled "Nutritional Deficiency Disease with Special Reference to Vitamin B Deficiency," which was discussed by Drs. T. Neill Barnett, Richmond; Wm. B. Porter, Richmond; James B. Stone, Richmond; and by Dr. Hite in closing.

Dr. Frank L. Apperly, Richmond, read his paper entitled "The Compensatory Mechanisms of the Body in Anemia" (illustrated with lantern slides), which was discussed by Dr. William B. Porter, of Richmond.

Dr. William H. Higgins, of Richmond, read his paper entitled "Current Trends in the Treatment of Chronic Arthritis" (illustrated with lantern slides), which was discussed by Dr. Julian M. Robinson, Danville, and by Dr. Higgins in closing.

Dr. T. Dewey Davis, of Richmond, read his paper entitled "The Present Status of the Medical Treatment of Peptic Ulcer," which was discussed by Drs. Walter Adams, Norfolk; J. Shelton Horsley, Richmond; Harvey B. Haag, Richmond; D. G. Chapman, Richmond; William B. Porter, Richmond; Frank L. Apperly, Richmond; Oscar L. Hite, Richmond, and in closing by Dr. Davis.

The paper of Drs. Staige D. Blackford of University and J. Russell Cook, Huntington, West Virginia, entitled "Results of Serum and Sulphanilamide Therapy in Lobar Pneumonia," was read by Dr. Blackford. This was discussed by Drs. R. D. Bickel, Roanoke (illustrated with lantern slides); C. Lydon Harrell, Norfolk; H. B. Mulholland, University; and by Dr. Blackford in closing.

Dr. P. G. Hamlin, Cambridge, Maryland, read his paper entitled "So-Called Spontaneous Subarachnoid Hemorrhage with Transient Hemiparesis, Aphasia and Psychosis (Report of Case)". This was discussed by Dr. O. B. Darden, Richmond, with Dr. Hamlin closing the discussion.

A paper entitled "The Practical Value of Gastrosocopy to the Internist" (illustrated by lantern slides), by Drs. E. B. Mewborne and E. L. Alexander, of Newport News, was read by Dr. Mewborne. It was discussed by Dr. Porter B. Vinson, Richmond, and by Dr. Alexander and Dr. Mewborne in closing.

The program having been completed, the morning session then adjourned.

Surgical Section

Wednesday Morning, October 5

The Surgical Section of the Medical Society of Virginia was called to order by Dr. I. A. Bigger, Richmond, at 9:00 A. M., in the auditorium of the Elks Club.

Dr. Thomas F. Wheeldon, Richmond, delivered his paper on "The Wheeldon Sleeve Wire Method of Fixation of Fractures," using lantern slides for illustration. Dr. R. V. Funsten of University, Virginia, opened the discussion, and was followed by Dr. M. H. Todd, Norfolk. Dr. Wheeldon thanked Drs. Funsten and Todd for their discussion, and expressed his appreciation in being allowed to present a paper.

The next paper was by Dr. Harry J. Warthen of Richmond, his subject being "The Treatment of Non-Malignant (Lymphogranuloma Venereum) Strictures of the Rectum," illustrated with lantern slides. It was discussed by Dr. Henry Lee, Roanoke, and by Drs. John S. Horsley, Reuben F. Simms, R. A. Nichols, Jr., and A. S. Brinkley, all of Richmond, and Dr. Warthen closed.

Dr. Lawrence T. Price, Richmond, presented his paper on "Verumontanitis," which was discussed by Drs. W. W. S. Butler, Roanoke, and B. E. Harrell, Norfolk, and Dr. Price in closing.

"Otogenic Acute Suppurative Arthritis" was the title

of the next paper presented by Dr. Francis Henry McGovern of Danville. Dr. C. L. Bailey, Danville, who was to have opened discussion of this paper, was unable to be present, and there was no discussion.

Dr. M. H. Todd, Norfolk, read his paper on "The Healing Process—General Principles." Dr. Charles W. Doughtie, Norfolk, who was to have discussed this paper, was not present, and there was no discussion.

The paper of Drs. Fred M. Hodges, L. O. Snead, and R. A. Berger, of Richmond, entitled "The Treatment of Hemangiomas and Lymphangiomas in Children," illustrated by lantern slides, was read by Dr. Berger, and was discussed by Dr. Vincent W. Archer, University, who illustrated his discussion with lantern slides, and Dr. Fred M. Hodges, Richmond. Dr. D. M. Faulkner, Richmond, asked a question from the floor, which was answered by Dr. Berger in closing.

Dr. E. W. Kirby of University, read the paper prepared by himself and Dr. John H. Neff, also of University, entitled "Experience with Prostatic Resection," and showed six statistical slides. This was discussed by Dr. Austin I. Dodson of Richmond; Dr. M. H. Todd, Norfolk; Dr. Linwood D. Keyser, Roanoke; Dr. B. E. Harrell, Norfolk; and by Drs. Neff and Kirby in closing.

The program having been completed, the meeting adjourned at 1:00 P. M.

General Session

Wednesday Afternoon

The Society met in the ballroom of the Hotel Danville and was called to order by the President, Dr. G. F. Simpson, at 2:20 P. M.

(Due to absence of the lantern, Dr. Gayle's paper was taken first.)

Dr. R. Finley Gayle, Richmond, read his paper entitled "The Problem in Caring for the Mentally Sick in Virginia", which was discussed by Drs. Hugh C. Henry, Richmond, and David C. Wilson, University.

President Simpson presented Dr. Frederick A. Willius, of the Mayo Clinic, Rochester, Minn. (invited guest), who read his paper entitled "The Effects of Protracted and Recurrent Congestive Heart Failure on the Liver", illustrated by lantern slides.

At the suggestion of the President, a rising vote of thanks was extended to Dr. Willius.

Dr. Reuben F. Simms, Richmond, read his paper entitled "The Value of the Periodical Health Examination", which was discussed by Dr. Fred J. Wampler, of Richmond.

The program being completed, the general session adjourned for the round-table discussions.

General Session

Thursday Morning, October 6

The Society convened in general session in the ballroom of the Hotel Danville at 9:30 A. M., with President Simpson presiding.

Dr. J. Franklin Waddill, Norfolk, read his paper entitled "Clinical Manifestations of Acute Rheumatic

Fever: Age Incidence, Diagnosis and Treatment" (illustrated by lantern slides), which was discussed by Drs. A. B. Hodges, Norfolk; Paul Camp, Richmond; E. B. Robertson, Danville; F. C. Rinker, Norfolk; and by Dr. Waddill in closing.

Dr. E. Tribble Gatewood, Richmond, read his paper entitled "Diagnostic Methods Which Have Served Me Best in Determining Sinus Disease and So-Called Hay Fever". Due to his absence the opening discussion of Dr. Thomas E. Hughes was read by Dr. W. O. Bailey, of Leesburg.

President Simpson said without objection he would call for the next paper, which is on a related subject.

Dr. Karl S. Blackwell, Richmond, presented his paper, "Some Practical Considerations of the Sinuses" (illustrated with lantern slides). Discussion of this paper was opened by Dr. W. Wallace Gill, Richmond.

The two papers on sinuses were jointly discussed (after the opening discussions) by Drs. Dean B. Cole, Richmond; and W. O. Bailey, Leesburg, and in closing by Dr. Gatewood and Dr. Blackwell.

Dr. David C. Wilson, University, read his paper entitled "Shock Therapy in the Treatment of Affective Disorders" (illustrated with lantern slides), which was discussed by Drs. G. B. Barrow, Staunton; R. Finley Gayle, Richmond; and by Dr. Wilson in closing.

The paper of Drs. Byrd S. Leavell, Julian R. Beckwith, and J. Edwin Wood, Jr., of University, entitled "Acute Glomerulonephritis—Observations on Clinical Course, Prognosis, and Treatment", was presented by Dr. Leavell (illustrated by lantern slides). This paper was discussed by Dr. Wood and by Drs. James B. Stone, Richmond; William B. McIlwaine, Petersburg; Samuel Newman, Danville; F. D. Daniel, Charlottesville; and in closing by Drs. Leavell and Wood.

Dr. William P. Gilmer, Clifton Forge, read his paper on "Roentgen Ray Examination of the Colon" (illustrated with lantern slides). This paper was discussed by Dr. C. H. Peterson, of Roanoke.

The scientific program having been completed, the President called for the report of the House of Delegates, and this was read by Miss Agnes V. Edwards, the Secretary. On motion, the report was adopted as read.

PRESIDENT SIMPSON: I want to take this occasion to thank the members of the Society, the committees, and the Secretary, and all others who have given me such splendid support in the past year.

The next order of business is the induction of our new president, Dr. Robertson, whom I ask to come forward. (Dr. Robertson came to the platform.) Dr. Robertson, it gives me a great deal of pleasure to present the gavel to you at this time. (Applause.)

Gentlemen, I want to ask you all to give Dr. Robertson the same loyal cooperation you have given me. When he appoints you on a committee, don't think you are just on a committee, but go to work and find out what your duties are and go ahead and perform them.

I thank you. (Applause.)

PRESIDENT ROBERTSON: Fellow-members of the Medical Society of Virginia, I accept with varied emotions the

high honor which you have bestowed upon me. My first emotion is amazement that you have given me this honor so unexpectedly and so undeservedly. The next is gratitude, because I feel that election to the presidency of this Society is the highest honor that can come to a physician in Virginia. I come to this office, also, with a feeling of humility, because I realize the great responsibilities involved; and I pledge you my word that I shall try to fulfill them.

This Society is dependent more upon its individual members than its officers for whatever it accomplishes. We are here merely to try to express your opinion, and I ask you to give to your present officers that whole-hearted cooperation which you have given in the past.

I thank you again for this very great honor. (Applause.)

The next order of business is the reading of the list of standing committees.

(Dr. Robertson then read the list of committees.)

Is there any further business to come before the meeting? If not, I declare the sixty-ninth annual session officially adjourned, whereupon the Society adjourned, at 1:35 P. M.

STANDING COMMITTEES

(The number after each name indicates the length of term of office, as one member of each Standing Committee is named by the incoming President for a term of three years, except in the case of the Department of Clinical and Medical Education and the Medical Economics Committee, which are also named at this time in accordance with the By-Laws.)

PUBLICATION AND PROGRAM: Dr. Wyndham B. Blanton (2), *chairman*; Dr. H. A. Tabb (1); Dr. J. Edwin Wood, Jr. (3).

SCIENTIFIC EXHIBITS AND CLINICS: Dr. W. Ambrose McGee (3), *chairman*; Dr. Staige D. Blackford (1); Dr. W. R. Rogers (2).

DEPARTMENT OF CLINICAL AND MEDICAL EDUCATION: Dr. G. F. Simpson, *chairman*; Mr. George B. Zehmer, *executive secretary*; Dr. I. C. Riffin; Dr. J. C. Flippin; Dr. Lee E. Sutton; Dr. P. S. Smith; Dr. E. L. Alexander.

LEGISLATION: Dr. H. U. Stephenson (1), *chairman*; Dr. J. K. Hall (2); Dr. J. D. Willis (3).

MEDICAL ECONOMICS: Dr. Walter B. Martin (3), *chairman*; Dr. John Hundley, Jr. (3); Dr. Guy Fisher (2); Dr. C. C. Coleman (2); Dr. John A. Gibson (1); Dr. Charles Kincheloe (1).

MEMBERSHIP: Dr. J. A. White (2), *chairman*; Dr. J. Bolling Jones (1); Dr. D. M. Kipps (3).

ETHICS: Dr. W. D. Kendig (2), *chairman*; Dr. G. H. Carter (1); Dr. J. R. Gorman (3).

BUSINESS SESSIONS

Council

The annual meeting of the Council of the Medical Society of Virginia was held in Hotel Danville, Danville, October 4th, at 11:00 A. M., with the President, Dr. G. F. Simpson, Purcellville, presiding. Others present were

Dr. A. F. Robertson, Jr., Staunton, president-elect; Drs. Griffin W. Holland, Eastville; Julian L. Rawls, Norfolk; Roshier W. Miller, Richmond; C. E. Martin, North Emporia; W. C. Akers, Stuart; John Hundley, Jr., Lynchburg; C. O. Dearmont, White Post; J. E. Knight, Warrenton; and C. B. Bowyer, Stonega, councilors; Dr. I. C. Riggan, State Health Commissioner; Mr. George B. Zehmer, executive secretary-treasurer of the Department of Clinical and Medical Education; and Miss Agnes Edwards, secretary.

The minutes of the winter meeting of the Council, as published in the March, 1938, issue of the MONTHLY, were approved, after which the secretary read the minutes of a Special Meeting of the Council, as follows:

A special meeting of the Council of the Medical Society of Virginia was held in the Society's office in Richmond, September 3, 1938.

Invitations had been sent all component societies to have representatives at this meeting, and there was a good attendance, as follows: Dr. G. F. Simpson, president; Dr. Alex. F. Robertson, president-elect; Drs. J. L. Rawls, Roshier W. Miller, C. E. Martin, John Hundley, Jr., C. O. Dearmont, and J. E. Knight, councilors; Dr. F. O. Plunkett, vice-president; Drs. Wright Clarkson, Walter B. Martin, and J. C. Flippin, delegates to the American Medical Association; Dr. Wyndham Blanton, editor; Drs. A. I. Dodson, H. C. Spalding, and C. L. Outland, from Richmond; Drs. T. H. Daniel, Frank Daniel, and A. D. Hart, from Charlottesville; Drs. H. S. Daniel and H. G. Byrd, from Louisa; Dr. W. W. Wilkinson, La Crosse; Dr. A. B. Hodges, Norfolk; Dr. E. M. Babb, Ivor; Dr. Guy Fisher, Staunton; and Dr. W. C. Elliott, Lebanon, representing various component societies.

Dr. Simpson presided and read the call received from the American Medical Association for a special meeting of the House of Delegates of that body on September 16th, for a consideration of the national health program submitted to the National Health Conference, recently held in Washington. He stated that the purpose of the meeting of the Medical Society of Virginia was to confer with the delegates to the A. M. A. that they might know the feeling of the membership in regard to this most important subject.

Upon request, Dr. Walter B. Martin, chairman of the Committee on Medical Economics, summarized the national health program, following which there was a free discussion of the subject. This culminated in the passage of the following resolution, by members of the Council present:

1. The cost of medical care to the indigent is an obligation of the entire citizenry and should be met by equitable public taxation.

2. The low income group needs and should have assistance in meeting the costs of medical care.

3. Any program for the extension of medical facilities should be directed by the medical profession as the group best qualified by experience and training; and, therefore, the Council of the Medical Society of Virginia requests the House of Delegates of the American Medical Association to cooperate with all agencies, private or governmental, local or Federal, in every effort to make available complete medical facilities to all citizens regardless of economic status, provided that the control and direction of such efforts be kept in the hands of the medical profession as the only group qualified by experience and training to direct such activities.

This was amended to include the following: with due consideration and in accordance with resolutions presented by the Medical Economics Committee.

These were adopted.

Dr. Miller, chairman of the Budget Committee, then presented the budget which had been prepared by him and Dr. C. E. Martin. He said there is a probability of some funds being available for investment about the first of the year when receipts are heaviest and suggested that it might be well to place some of the money in one of the savings corporations sponsored by the United States government, securing a higher rate of interest than given by the banks. He also recommended that the balance of \$62.31 in the Trust Fund revert to the general treasury of the Society, as no recommendation had been received from the Department of Clinical and Medical Education as the disposition of the funds, in accordance with order

of the House of Delegates last year. These requests were granted.

In explaining the budget, Dr. Miller said they had added a new item for expenses of delegates to the American Medical Association, and asked the opinion of the Council as to this. Some felt the full expenses of the delegates should be paid by the Society and others that the Society assume only the railroad fare. As the cost of this would vary according to the place of the A. M. A. meeting, it was thought best to have it a flexible appropriation. Motion was then made, seconded and carried that the Society pay the railroad expenses, including Pullman fare, for the delegates to the American Medical Association.

In addition to an appropriation of \$750.00, the Department of Clinical and Medical Education asked that they might have returned to them the unexpended balance of last year's appropriation, \$475.76, making a total of approximately \$1,200.00, for the coming year. Mr. Zehmer was given the privilege of the floor to explain the need for the additional amount. He said that for several years courses have been given in Pediatrics and Obstetrics, the clinicians for these having been furnished by the Children's Bureau in Washington, with the cooperation of our State Health Department. It is likely that this help will not be available another year. The demand is now for courses in Internal Medicine and other subjects and no appropriation is made for these by government agencies. If the balance returned to the Society be added to the \$750.00 appropriation, and larger registration fees charged, the Department believes it can put on the courses desired by members of the Society. After this explanation, it was moved, seconded and carried that the budget as presented be adopted, and a vote of thanks was extended Drs. Miller and Martin for their work in preparing this.

Dr. Simpson then asked for the report of the Committee on the Interrelationship of Membership in the Local, State and National Medical Organizations. Dr. Bowyer, chairman, said that he had had no meeting of his committee, as they could not seem to get together on any special recommendations to offer, but he would like to hear from the other members of the Council on this subject. He said it is plain that membership in the American Medical Association is dependent upon membership in one's State society, and this in turn upon membership in a local society. The question seemed to be, should a man who joins the State Society through his local society and then resigns or drops out of his local society be allowed to remain in the State Society? His interpretation of the By-Laws is that a member should be dropped from the State Society when he loses his membership in his local society. The opinion was expressed by some that a member might continue in the State Society unless dropped from his local society because of unethical practice. The secretary stated that frequently local secretaries overlook advising names of those dropped and also names of new members and there is no way of securing this information unless there is better cooperation. The outcome of this discussion was that our By-Laws remain

as they are at the present time and that the councilors cooperate with the secretary in securing better cooperation on the part of the officers of the component societies.

Dr. Dearmont was next asked for a report of his Committee to Study the Use of Sirens on Doctors' Cars When Going to Accidents. He stated he had called no meeting of his committee as he was advised this would have to be put into effect by an act of Legislature, but was still of the opinion that this would be a good thing and did not feel doctors would abuse the privilege. Dr. Rawls said he did not think doctors would abuse the privilege but they are not always the only ones to drive their cars and some one else might. Dr. Miller said a lock might be put on the siren and it could be locked when not in use by the doctor. Dr. Martin offered a motion that this matter be referred to the Legislative Committee for their consideration and this motion carried.

A letter from the Council on Industrial Health of the American Medical Association in regard to having a Committee on Industrial Health as a special committee of this Society was referred to the incoming President.

Resolutions of the American Medical Association with regard to the licensing of foreign graduates in medicine were referred to the House of Delegates, as also was a communication from the Bureau of Health and Public Instruction of the A. M. A., concerning the plan of the Indiana State Medical Association for the performance of public health services in doctors' offices.

A letter was read from Dr. J. Shelton Horsley, chairman of the Virginia Committee of the American Society for the Control of Cancer, asking the endorsement of the Council and House of Delegates of the Women's Field Army of Virginia for Cancer Education. Dr. Wright Clarkson, chairman of the Executive Committee of the Field Army, was asked to come into the meeting to explain the work of this organization. Following his talk, Dr. Riggins said that the Women's Field Army is endeavoring to have laymen consult their family physicians whenever they have symptoms which may indicate cancer, with a view to discovering the disease in its incipency. The State Society has not been represented in this group, though all the doctors working with it are members of the Society, and the women wish the support of this organization. Personally, he felt it would be wise to appoint an advisory committee to work with them.

Dr. Rawls said this organization is very active in Norfolk and contributed financially for the equipment of their Cancer Diagnostic Clinic. They are going ahead with their work and he felt the State Society should take some stand in the matter.

Dr. Holland suggested that the Council refer Dr. Horsley's letter to the House of Delegates as it would thus be brought more generally to the attention of the medical profession of the State.

There being no further business, the meeting adjourned.

AGNES V. EDWARDS,

Secretary.

House of Delegates

October 4, 1938

The first meeting of the House of Delegates in Danville, October 4th, in the Y. M. C. A. Building, was called to order by the President, Dr. G. F. Simpson, at 2:00 P. M.

The secretary checked members as they came into the House, and, as a quorum was found present, roll call was dispensed with.

Minutes of the last meeting of the House were adopted as published in the December, 1937, issue of the MONTHLY.

The budget, approved by the Council, was presented by Dr. R. W. Miller, chairman of the Budget Committee, and was approved and adopted as presented.

BUDGET FOR MEDICAL SOCIETY OF VIRGINIA AND VIRGINIA MEDICAL MONTHLY

October 1, 1938—September 30, 1939

| MEDICAL SOCIETY OF VIRGINIA | BUDGET |
|---|------------------|
| Salaries | \$2,730.00 |
| Rent and Telephone | 365.00 |
| Stationery and Office Supplies | 65.00 |
| Postage | 235.00 |
| Reporting Annual Meeting | 175.00 |
| Badges | 40.00 |
| Programs | 80.00 |
| Repairs and Replacement | 45.00 |
| Audit Fee | 30.00 |
| Miscellaneous Office Expense | 25.00 |
| President's Expense | 134.40 |
| President-Elect's Expense | 58.00 |
| Councilors' and Officers' Expense | 70.00 |
| Invited Guests' Expense | 60.00 |
| Delegates to A. M. A. | 150.00* |
| Walter Reed Commission | 75.00 |
| Dept. Clin. and Med. Education | 1,225.76 |
| Scientific Exhibits and Clinics | 125.00 |
| Medical Economics | 75.00 |
| Child Welfare | 10.00 |
| Legislation | 25.00 |
| | <hr/> \$5,798.16 |

| VIRGINIA MEDICAL MONTHLY | |
|--------------------------------------|-------------------|
| Salaries | \$2,730.00 |
| Preparation of Journal | 6,500.00 |
| Office Rent and Telephone | 365.00 |
| Stationery and Office Supplies | 30.00 |
| Office Postage | 50.00 |
| Repairs and Replacements | 45.00 |
| Audit Fee | 30.00 |
| Miscellaneous Expense | 20.00 |
| | <hr/> \$9,770.00 |
| | <hr/> \$15,568.16 |

*More or less to cover railroad and Pullman fares.

The Budget Committee was given power to invest any money which might be available about the first of year, as approved by the Council, and the recommendation that the Trust Fund of \$62.31 be placed in the general funds was likewise approved.

Dr. Simpson next asked for action on the Committee reports as published in the September issue of the MONTHLY.

Executive Secretary-Treasurer's Report (page 550)—adopted.

Report of Delegates to American Medical Association (pages 550-551)—adopted.

Dr. Clarkson stated that, in view of the Special Session of the House of Delegates held in September, he wished to submit the following supplementary report:

SUPPLEMENTARY REPORT OF DELEGATES TO THE AMERICAN
MEDICAL ASSOCIATION

A special session of the House of Delegates of the American Medical Association was held in Chicago on September 16-17 of this year, for the purpose of considering the recommendations of the National Health Conference held in Washington July 18-20, 1938.

Prior to this meeting, our President, Dr. Simpson, called a meeting at our headquarters in Richmond for the purpose of giving instructions to your delegates to the A. M. A. This meeting was attended by your Council and by representatives from the various component societies of the Medical Society of Virginia. At the meeting certain resolutions were unanimously adopted by the Council. These have been published and no doubt you have read them.

Your delegates took these instructions to Chicago and presented them to the House of Delegates of the A. M. A. We also spent much time conferring with the various committees so as fully to inform them of the wishes of the Medical Society of Virginia.

We feel that the resolutions adopted by your Council and the work of your delegates in Chicago had considerable influence there, and that the Medical Society of Virginia is to a great extent responsible for the more constructive attitude now shown by the A. M. A.

We are proud to say that the report of the Reference Committee on consideration of the National Health Program as finally adopted by the House of Delegates of the A. M. A. conforms closely in principle to the resolutions adopted by the Council of the Medical Society of Virginia.

The report of the Reference Committee of the A. M. A. on consideration of the National Health Program is on the first page of the October issue of the VIRGINIA MEDICAL MONTHLY and a detailed report of the work of the House of Delegates of the A. M. A. in Chicago has been published in the September 24th issue of *The Journal of the American Medical Association*. Therefore, these will not be included here.

There can be no doubt about the fact that the United States Congress has the power. It can adopt such legislation to regulate American medicine as it may so desire, and your delegates feel that we should be diplomatic in our relations with Congress. Only by clear thinking, with

an attitude of diplomacy, free from emotionalism and bitterness, can we hope to accomplish our aims.

J. C. FLIPPIN

W. B. MARTIN

WRIGHT CLARKSON, *Chairman*.

This supplementary report was also adopted.

Report of Publication and Program Committee (page 551)—adopted.

Report of Committee on Legislation (page 551)—adopted.

Dr. Stephenson, chairman, said that his Committee had also assisted the Arlington County physicians in their appeal to the State Society in regard to the Group Health Association. As it seemed purely a local question, there was no definite report in regard to this.

Report of Committee on Scientific Exhibits and Clinics (page 551)—adopted. Dr. McGee, chairman, then presented the following supplementary report as changes had to be made after publication of the original:

**Supplementary Report of the Committee on
Scientific Exhibits and Clinics**

We are very glad to be able to report that the exhibits for this year are twenty in number and we feel the largest and best scientific exhibit in the history of the Medical Society of Virginia.

Last year it was decided that we save exhibit materials and utilize them this year. Owing to the cost of drayage, smallness of space for exhibits and different dimensions of booths, it was found cheaper to use entirely new materials in the construction of booths this year. In spite of all precautions and with an attempt to keep within our budget, it was found impossible to care for scientific exhibit materials, construction, exhibitors' signs, correspondence, etc., on our present allotment with such a large number of exhibits.

This year the dimensions of the exhibit booths, with the exception of the side partitions, are almost identical to those of the national and sectional societies.

It will be necessary to dispose of the materials left with the Valley Lumber Company of Roanoke, in October, 1937. Will you please advise the committee just what we are to do. In addition we would like to have your advice regarding disposition of this year's exhibit materials because of the additional expense in knocking down the exhibit, hauling it to some storage place, and then storing it have to be considered. Tentative arrangements have been made with the Ruffin & Payne Lumber Company of Richmond, to store it for ten dollars (\$10.00) per year, if agreeable to you. That company hauled the material to Danville *gratis* as they had another shipment going there and, if possible, may be able to bring it to their Richmond lumber yard under similar conditions.

We hope that the Society will enjoy the Scientific Exhibits and will encourage the exhibitors by visiting their booths.

We wish to thank the Y.M.C.A. for the use of their lobby and the Danville physicians for their cooperation.

Respectfully submitted,

WILLIAM R. ROGERS,

STAIGE D. BLACKFORD,

W. AMBROSE MCGEE, *Chairman*.

Dr. Clarkson stated that these Scientific Exhibits are splendid and he felt this display was one of the 'biggest things that had been done by the Society in a number of years. He moved that Dr. McGee's supplementary report be approved and the treasurer authorized to pay the additional expense that would be incurred in moving the material used in the exhibits, the appropriation for the Committee not to exceed \$200.00. This was seconded and carried and Dr. McGee given a rising vote of thanks for his work.

Report of Department of Clinical and Medical Education (pages 551-554)—adopted.

Report of Medical Economics Committee (pages 554-557). Dr. W. B. Martin, chairman, said it would be best to act on this report by the sections in which it was written, as each referred to an entirely different subject. They were then taken up seriatim.

Farm Securities Administration—adopted.

The Paper by Dr. Bailey—adopted.

Committee of Physicians—It was moved and seconded that this be adopted.

Dr. Isaac Peirce stated that he had been hearing about "State Medicine" for a long time, and he had yet to find a person who could tell him what they meant by it. He was not in favor of the resolutions.

Dr. John Hundley said that the delegates to the American Medical Association brought back a report from the Special Meeting in Chicago, which more or less covered this matter, and he did not feel the Society was justified in passing this section. He offered a substitute motion, which was seconded, that this part of the report be tabled.

Dr. Martin said that he felt his report had been misunderstood. It did not make any difference as to whether or not the term "State Medicine" was used, but there are certain changes which have to take place. The committee is not opposing any effort to take care of the people of the United States. He stated that the three matters under consideration are: distribution of medicine; preservation of the policy of medicine; and providing a situation by which medical science may continue to advance. There is a definite opinion as to the effects of proposed methods. The resolutions put forth (1) that any group in American medicine should operate through the regular recognized channels of the American Medical Association, as the representative body of American medicine and (2) the methods by which certain of these procedures should be carried out—medical care and financing of medical care should be regulated locally and not be handled nationally. He felt that many of the proposals of

the Committee of Physicians were perfectly sound and it is only the fact they claim to represent American medicine that an objection is being raised.

Dr. W. O. Bailey thought this the best report he had read in the JOURNAL. He felt it was one which required and deserved considerable consideration. The physician and the Federal Government are working for the same thing. Medicine must be socialized, as have other professions of the country, but there is a proper way to do it. The question is whether the government or the doctor or a combination of the two can best handle the matter. It is the desire of everyone that the people receive the best possible medical care. He commended the committee for its report and felt the Society should give adequate consideration to their work.

Dr. J. E. Knight said the committee had made a thorough study of this question, and he thought it should not be tabled but accepted.

Dr. W. C. Akers congratulated Dr. Martin on his report and stated that he did not want to see the day when medicine is socialized. He felt the reason for all this propaganda was that people are not getting adequate medical attention.

Dr. Martin Hiden stated that in every organization there are both liberals and conservatives. It is too late to fight socialized medicine but the main thing is that medical men must continue in control of medical matters. Medical affairs should not be handled by politicians. He felt this report should be endorsed as presented.

Dr. Carrington Williams felt that Dr. Hundley's statement had been misunderstood and that the report of the Committee of Physicians had had a great deal to do with the action of the American Medical Association. He thought it would be wise to eliminate the last part of this section, leaving the resolutions which were the important part.

In answer to an inquiry by Dr. F. D. Daniel, Dr. J. S. Horsley, a member of the Committee of Physicians, being given the privilege of the floor, said there was very little difference between what was adopted by the House of Delegates of the American Medical Association and the Principles and Proposals of the Committee. He felt the only thing now necessary is to think these things out and for the physicians to take the lead by asserting their rights and insisting that they control these matters.

Dr. F. H. Smith, another signer of the Committee of Physicians, felt very proud that the American Medical Association had adopted their proposals with few exceptions. He wished the House of Delegates would cut out of their report that part regarding the "amount of \$850,000,000, because the Committee of Physicians never proposed the spending of this.

Dr. Hundley then offered as a substitute motion that beginning with "We see no necessity" and through "submit the following resolutions" be deleted.

Dr. Clarkson said he agreed with this as the Society did not want to hurt any of its members who were active on the Committee of Physicians. He felt the Society

should stop throwing brickbats and try to work together.

Dr. Martin stated that it was not the purpose of his report to offend any individual but he felt a great deal of harm could be done by a minority group announcing their plans as representative of American medicine.

Dr. Horsley said publicity had not been given out by the Committee of Physicians but by the editor of *The Journal of the American Medical Association*. The Committee did not want publicity, and he felt the Society should not adopt resolutions denouncing them for expressing their opinions.

Dr. Holland moved that action on this report be deferred until the next meeting of the House, because the members did not know what it was all about. This was seconded and carried.

Dr. Martin then continued with the balance of his report.

National Health Conference.—The following substitute was offered for the printed report as this was intended to be in accord with the recent action of the American Medical Association.

NATIONAL HEALTH CONFERENCE

Your committee is gravely concerned over the trend towards State medicine. We use the term "State medicine" advisedly since a strong effort is being made to extend the power of the Federal Government into every part of the medical field. The so-called National Health Conference that met in Washington in July, has recommended a program involving the expenditure by the Federal and State governments of huge appropriations that are to be increased gradually up to \$850,000,000 per year. This last figure represents a sum in excess of the combined net income of all the physicians in the United States and is more than a fourth of all the money now expended by the people of the United States for medical care. It is about equal to the total amount paid by the American people for hospital care, plus the amount spent on new hospital construction.

We are in sympathy with many of the objectives set forth in the committee's recommendation and we are conscious of the desirability of extending proper medical care to all of those who are in need of such care. We are persuaded, however, that the preservation of the quality of medicine and the maintenance of conditions favorable to the free advancement of medical science is of more importance to the present and future welfare of our people than any other consideration. We do not feel that a grave national emergency exists, from the standpoint of need for medical service, of a degree that would justify hurried or poorly planned procedures. The statement that one-third of our population is without proper medical care is contrary to common knowledge and cannot be supported by actual figures based on any adequate survey.

Public Health Service.—We approve of the extension of public health service—local, State and Federal—to cover the field of preventive medicine. We believe that government is properly concerned with public health measures

that have to do with the prevention of communicable diseases, sanitation, industrial hazards, and such like conditions that have effect on the general welfare. Most of these measures can best be directed by local government units, certain ones by individual States, and a few by the Federal Government. In certain instances international cooperation is required. It is our firm conviction that the line of demarcation between the functions of these various units should be preserved and that the concentration of preventive health work at Washington would be disastrous in its consequence. We would point out also the importance of the economic factor in the prevention of disease. Adequate food, shelter, and clothing and in the improvement in general living conditions play a large part, in the maintenance of health and the prevention of disease.

Hospitals.—We approve of the extension of hospital facilities where the need of such service can be shown to exist. We believe that there is greater need for improvement of existing hospital facilities than for the construction of new hospitals. We would emphasize the need of careful consideration of all the factors involved before embarking on any extensive program of hospital construction. It is further evident that full payment to hospitals for the care of the indigent would greatly improve the present hospital situation.

Care of the Indigent Sick.—We believe that satisfactory provision should be made for the full medical care of the indigent sick by local government units, supplemented where necessary in certain poorer communities by State or Federal aid. Any program for the extension of such medical care should be worked out by the medical profession and its allied branches, in conjunction with the proper local authority and should be directed by the medical profession.

General Program of Medical Care.—We approve in principle of hospital insurance if properly safeguarded and if a clear division between medical service and hospital care is maintained. We feel that hospital insurance plans can best be worked out by local groups operating on a non-profit basis. Several such plans, initiated by the medical profession, are being operated successfully in this State at the present time. We are opposed to any of the plans of health insurance yet proposed. Experience with these plans in other countries clearly demonstrates their destructive effect on the quality of medical service rendered. This objection does not apply to the various indemnity insurance plans where the individual is indemnified in cash on an agreed basis for loss or expense incident to illness.

Insurance Against Loss of Wages During Illness.—We endorse in principle the proposal for insurance against loss of wages as a result of illness. It is essential, however, that the certification of illness and the provision of medical care be entirely separate functions.

As previously stated, we are in sympathy with many of the objectives set forth in the report of the National Health Conference. We believe, however, that the ac-

tivity of the Federal Government should be limited largely to planning and the formulation of standards. The operation of plans should be under local control and should be directed by the medical profession, in cooperation with the proper local authority.

Be it therefore resolved by the House of Delegates of the Medical Society of Virginia, duly assembled in Danville on this 4th day of October, 1938, that we approve of the plans and proposals as set forth in the above declaration by the Committee on Medical Economics of the Medical Society of Virginia; that a copy of these recommendations be sent to our representatives in the Congress of the United States; and that they be requested to carefully scrutinize any proposed legislation on the subject of medical care and that they endeavor by every means in their power to have such legislation conform to the principles herein set forth.

This was adopted.

A Study of Medical Care—Dr. Martin moved the adoption of this and also that there be a change in the By-Laws of the Society to make the Committee consist of five instead of three members. However, as this would complicate the By-Laws, he offered as a substitute that the number of members be six, two to be appointed each year for a term of three years. This was adopted, the change in the By-Laws to be laid on the table until the next meeting.

Group Health Association—Dr. Clarkson felt this part should be left out as the House of Delegates of the American Medical Association had already adopted resolutions governing this. Dr. Hiden said this thing had already been done and the District Courts had declared it legal. Dr. Martin stated it was still in the Courts and was going to a higher Court, and he did not see any reason why this should not pass as it is against ordinary every-day standards of medicine. This section of the report was then adopted.

Advertising of Proprietary Remedies and Appliances—adopted.

Dr. Martin then moved the adoption of the report of the Medical Economics Committee as a whole, with the exception of that portion laid on the table. Seconded and carried.

Membership Committee (page 557)—Dr. J. Bolling Jones, a member of the Committee, proposed for honorary membership in the Society the retiring president, Dr. G. F. Simpson, and Dr. R. P. Cooke of Lexington, who was very active with Dr. Walter Reed in the work on the prevention of yellow fever. Seconded and carried.

Ethics Committee (page 557)—adopted.

Advisory Board to Woman's Auxiliary (page 557)—accepted.

Child Welfare Committee (pages 558-559)—Dr. F. D. Wilson, chairman, called attention to the two resolutions

in this report. Dr. Clarkson moved that they be referred to the Legislative Committee with instructions to report at the next meeting. Carried.

Pneumonia Commission (page 560)—adopted.

Walter Reed Commission (page 559)—adopted.

Program for Health Division of Virginia Conference of Social Work (pages 559-560)—Dr. Basil Jones, chairman, stated there was a possibility that the Extension Division of the Child Welfare Conference will meet with the Virginia Conference of Social Work next year and he believed it necessary that this committee be continued. Adopted.

State Board of Nurses' Examiners (page 560)—adopted.

Syphilis Control (pages 560-562)—adopted.

Virginia State-Wide Safety Conference (page 563)—Dr. Moncure said he only wished to emphasize the last clause of the report and recommend that a committee of three, or at least two, physicians be appointed to attend these conferences, and make an annual report to the Society. This committee should come from the city in which the conference is held, and should be given power to act for the Society, with the consent of the President, in matters of endorsing any movement for public safety that might come up for legislative or executive action, that needs immediate attention. This report was adopted.

Maternal Welfare Committee—no member present to make a report.

Virginia Welfare Council—Dr. F. P. Fletcher, representative from the Society, presented the following report:

RÉSUMÉ OF PROCEEDINGS OF VIRGINIA WELFARE COUNCIL

The Virginia Welfare Council, which convened on May 6, 1938, at Richmond in connection with the State Conference of Social Work, devoted its whole time in convention to the question of Insanity and Feeble-mindedness; Prevention and Treatment.

Dr. R. Finley Gayle, Jr., Richmond Psychiatrist and member of the State Hospital Board, spoke on the Extent of Mental Illness and Feeble-mindedness in Virginia. The general practitioner, according to Dr. Gayle, should be sufficiently well informed in psychiatry to do preventive and minor curative work. The increase in statistical insanity, when viewed in the light of generally unrecognized findings, is not alarming. Dr. Gayle touched on the enormous expenditures for insanity, and listed the existent and proposed facilities in the State. He described the need for a travelling mental hygiene clinic, and the organization of a State Department with a Director of Mental Hygiene, and stressed the need for a social service department for follow-up and contact services in order

to obtain accurate public information for the taxpayers.

Following Dr. Gayle, Dr. H. C. Henry, Superintendent of the Central State Hospital, told the convention that Virginia, unfortunately, had a lower per capita expenditure (\$148.19) than any other state. He differentiated between treatment of somatic organic diseases and functional psychoses. The mental examination, according to Dr. Henry, deserves first place in treatment.

The place of occupational therapy in the Virginia set-up and the use of such methods as insulin shock were discussed, along with fever therapy and hydrotherapy. Dr. Henry stated that the use of drugs in mental hospitals is becoming obsolete. In closing, he said that the kind and understanding hospital attendant is the psychiatrists' greatest ally, and commended the opening of two training schools for psychiatric nursing workers in Virginia.

Dr. James N. Williams, Director of the Bureau of Mental Hygiene of the State Department of Public Welfare, spoke on "Present Preventive Programs for Feeble-minded and Mentally Ill People in Virginia." He gave a historical summary of mental hygiene clinics in the State, and spoke of the present tendency to use public school teachers in recognition and treatment of mental cases. Physicians are thought to be equally as important. Sterilization was likewise thought of value, but all present facilities condemned as inadequate, and needing expansion to cope with the situation.

"The Training and Care of the Feeble-minded as Public Assets" was treated by Dr. G. B. Arnold, Superintendent of the State Colony for Epileptics and Feeble-minded. Two per cent of Virginians are feeble-minded, according to this authority. He spoke of mental tests used at the colony, stating that a modified Binet-Simon test is most satisfactory. Morons can be trained, and sociological training is more important than vocational training. They can be taught respect for law.

Dr. Joseph R. Blalock, Superintendent of the Southwestern State Hospital, Marion, Virginia, outlined a Program for Adequate Prevention and Better Treatment of Mental Diseases. He, too, endorsed selective sterilization in controlling hereditary disorders. The Social Worker, according to Dr. Blalock has great opportunity for good work. This should be one psychiatrist to every 150 patients, instead of one to every 400 as at present. There should be an increased number of psychiatric nurses, psychiatric social workers, and occupational therapists. The two State medical schools should contain psychiatric departments and research centers to train young doctors and social workers. At present, according to Dr. Blalock, Virginia has only half as many physicians and attendants as she should have.

Miss Loraine Schmitt, Psychiatric Social Worker of the Childrens Memorial Clinic, Richmond, set forth the Role of the Psychiatric Social Worker in a Mental Hygiene Program. The social worker is seen as working with, not for, the psychiatrist social history and environmental information supplied to the doctor by the social worker is valuable in treatment. Education and child

guidance are also fertile fields, likewise so is family case work. In general, the psychiatric social worker aids the psychiatrist in presenting a balanced mental program. Dr. Harvie DeJ. Coghill, Director of the Childrens Memorial Clinic of Richmond, spoke on Parental and Child Guidance in the Prevention and Treatment of Behavior and Personality Problems. He said that there is no statistical measure of the value of mental hygiene. The home start is most important. Personality of the parent is as important as that of the child. Dr. Coghill outlined a five-year plan for the training of psychiatrists for Parental and Child Guidance.

In the evening a very interesting Panel Discussion on the Mobilization of Social Forces to Create a Mental Hygiene Program was held, with Dr. W. T. Sanger, President of the Medical College of Virginia presiding. Participating forces were Religion, Dr. W. Taliaferro Thompson; Education, Dr. E. L. Fox; Medicine, Dr. O. B. Darden; Social Work, Mr. Arthur Guild; Law, Judge John L. Ingram; Civic Clubs, Mrs. Nelson Beck; Newspaper and Radio, Mr. William Shands Meachum.

Frequent reference was made to the Survey of Virginia Mental Hospitals, conducted by the Mental Hospital Survey Committee for the State Hospital Board of Richmond. This 138-page survey, published in January, 1938, contains more than fifty recommendations for improvement of the Virginia program.

The Medical Society of Virginia is represented on the Virginia Welfare Council by a delegate appointed by the president. Inasmuch as the Virginia Welfare Council is composed of a number of outstanding citizens in the technical and professional fields, who can do excellent work in a mental hygiene program by their guiding and cooperative efforts, it is recommended that the Medical Society of Virginia continue to have representation in this body.

This was adopted.

In accordance with the By-Laws, it was necessary to appoint a nominating committee at this meeting and a recess of ten minutes was given in order that the members of the various districts might get together and appoint representatives. This resulted in the following committee:

- 1—Dr. J. M. Lynch.
- 2—Dr. W. B. Martin.
- 3—Dr. F. P. Fletcher.
- 4—Dr. W. W. Wilkinson.
- 5—Dr. I. C. Harrison.
- 6—Dr. Frank Farmer.
- 7—Dr. Guy Fisher.
- 8—Dr. H. A. Latane.
- 9—Dr. P. Q. Daniel.

A communication from the American Medical Association with regard to licensing foreign graduates was read by the secretary. Dr. Moncure felt this would work a hardship on foreigners, who had been driven from other countries, if they had to wait to become citizens before they could obtain licenses. In Virginia, they must have

applied for citizenship before they can be licensed but the actual granting of citizenship takes five years. He felt a good many excellent men who would make splendid physicians would be held up in practice a long time and did not think it should be done. It was moved that this letter be referred to the Legislative Committee for a report at the next meeting of the House.

A letter with regard to the endorsement of the Women's Field Army for Cancer Control was then read. Dr. J. E. Knight thought the Society should have an advisory committee for this. Dr. Horsley said they would be delighted to have the Society appoint such a committee and thought it would be an excellent idea. Dr. Hiden stated that as they already have an advisory committee, every member of which is a member of this Society, he did not feel a second one was necessary. It was moved and carried that this organization be endorsed.

A communication from the American Medical Association with regard to the "Indiana Plan" of health education and preventive medicine and a pamphlet entitled "Two Birds with One Stone" were ordered received and filed, as it was stated by Dr. Riffin that Virginia is already carrying out this plan rather fully; the only thing that the Society is not doing is summarizing their activities in concise form.

Dr. I. C. Riffin, State Health Commissioner, being given the privilege of the floor, told of some of the activities of the State Health Department during the year. He said Dr. Blanton, chairman of the Commission on Pneumonia Control, had worked with them in trying to secure an appropriation for this work. They were not successful this year but would keep on trying. A rather complete survey of the State has been made and an agreement reached with some of the hospitals to set up typing stations in their complete charge. They hoped to furnish the typing serum to the hospitals, and they might be able to make some arrangements whereby this sera might be obtained a little cheaper. Arrangements are also being made to train the technicians in giving this treatment.

An appropriation was made in the last Legislature for the surgical treatment of tuberculosis. No strings were tied to it by the General Assembly and arrangements have been made with some of the hospitals to give this surgical treatment. Where there are no hospitals within a reasonable distance a clinician is selected by the County Medical Society or District Society to do this.

An appropriation was made by the State and Federal governments for work with venereal disease control. It was felt that it would be best to use practically all of this in drugs to be furnished to the physicians and not to the patient. They hoped to be able eventually to follow-up those cases who have discontinued treatment. These drugs can be used to treat any patients, pay or indigent, and the charge should be a matter for the medical profession to decide. There is always a tendency for a patient to want to go where he can get free work; it may mean

the physician can keep the patient and his family if a certain number of indigents are treated so as to hold them. Clinics are operated in certain portions of the State and it is hoped eventually that the Medical Society of Virginia will operate them. The local groups set their charges for these clinics.

Dr. W. N. Thompson stated that at the 1935 meeting of the Society a resolution had been presented by the Mid-Tidewater Medical Society in regard to college clinics accepting patients who were able to pay. No definite action had been taken on this and he moved that the matter be referred to the Committee on Medical Economics and they be requested to bring in a report at the next meeting of the House. Carried.

Dr. H. U. Stephenson said that the Governor of Virginia would be in Danville that night and suggested that the President appoint a committee to invite him to be present at the opening meeting of the Society. Dr. Stephenson and Dr. Clarkson were appointed.

The House then adjourned to meet again the following morning at nine o'clock.

House of Delegates October 5, 1938

The second meeting of the House of Delegates was held on Wednesday, October 5th, in the Y.M.C.A., at nine o'clock, with the President, Dr. G. F. Simpson, presiding.

A quorum being present, a recess was taken for the selection of Councilors from the even numbered districts. Those named are: 2nd—Dr. J. L. Rawls, Norfolk; 4th—Dr. C. E. Martin, North Emporia; 6th—Dr. J. L. Hundley, Jr., Lynchburg; and 8th—Dr. J. E. Knight, Warrenton.

Dr. Carrington Williams told of an insurance plan being worked by Mr. G. H. Winfrey. This is a combination of health and accident insurance sold in groups. If 50 per cent of a group takes this insurance the rates are much lower and everyone is eligible, regardless of their state of health, up to the age of sixty-five. He stated that folders were on hand for any members interested.

Dr. Horsley extended to the members of the Society an invitation to attend the medical section of the American Association for the Advancement of Science which meets in Richmond, the latter part of December. There will be a symposium on Mental Diseases which will be participated in by outstanding men of the country.

Dr. Stephenson, chairman of the Legislative Committee, gave the following report, in regard to resolutions of the Child Welfare Committee referred from the first meeting of the House:

On October 4th, the Legislative Committee received from the House of Delegates, for action, the following recommendations contained in the report of the Child Welfare Committee:

(1) That the Society request the State Department of Public Instruction to make compulsory, with the

physical examination, a report on X-ray examination of the chest of each person applying for a position as teacher in the kindergarten, grammar or high schools of the State.

(2) That such steps be taken as may be necessary to insure legal periodic inspections of the private sectarian or non-sectarian schools of the State.

We submit for your consideration the following:

First, that the Virginia Commissioner of Health, Dr. I. C. Riffin, and the Virginia Superintendent of Public Instruction, Dr. Sidney B. Hall, be requested to make effective as early as possible X-ray examination of the chest as a necessary part of the physical examination of those applying for the position of teacher in the kindergarten, grammar grades, and high schools of the State.

Second, that the Legislative Committee be authorized to submit to the Legislature for adoption a Bill empowering the State Health Department, through its legally delegated officers, to make such inspections of the Mission Schools and private schools of the State as may be necessary to secure adequate sanitary conditions surrounding the pupils, wards and personnel of such institutions.

Dr. Harrell moved that the recommendations of the Child Welfare Committee be adopted. Seconded and carried.

Dr. Stephenson said his committee had considered the letter with regard to the licensing of foreign physicians and felt this was a matter for the State Board of Medical Examiners and requested that it be referred to them.

Dr. Moncure moved that the letter with regard to foreign physicians be received and filed as it was not necessary to bring it before the State Board of Medical Examiners. Seconded and carried.

The following change in the By-Laws was then presented and adopted:

Article VIII, in first paragraph beginning on page 16, to read: "Each of these Committees, with the exception of the Department of Clinical and Medical Education and the Committee on Medical Economics, shall consist of three members", etc.

Add paragraph before paragraph commencing "All committees", to read "The Committee on Medical Economics shall consist of six members, whose term of office shall be for three years, two to be appointed each year by the incoming President who shall also name the chairman."

A report from the Medical Economics Committee was then called for. Dr. W. B. Martin, chairman, first presented the resolution of the Mid-Tidewater Medical Society presented at the 1935 meeting of the Society, and brought up yesterday for reconsideration, and moved the adoption of the following:

Your Committee has considered the resolutions of the Mid-Tidewater Medical Society in reference to the clinic treatment of non-indigent patients.

We recognize the justice of the complaint lodged by the Mid-Tidewater Medical Society and the social importance of conferring free clinic care to the medical needy.

We, therefore, recommend that it is the sense of this House of Delegates that the various free clinics in the State use every possible endeavor to determine the economic status of their applicants and to confine their admissions to the group of medical needy.

Dr. W. N. Thompson felt that this should be added to by stating that patients going to clinics should have the written permission of their physician. This was seconded. Dr. Martin explained that he had tried to make his resolution broader as he felt these patients should be investigated by social agencies so as to be sure they were indigent.

Dr. A. E. Turman said that the Medical College of Virginia is doing this as he had had a number of patients come to him for him to fill out applications.

Dr. W. O. Bailey said that in Loudoun County they had a blank form that had to be filled out before a patient could secure free medical attention and this had proved very effective.

Dr. M. B. Hiden said the clinic at Johns Hopkins Hospital required a recommendation of a physician.

Dr. P. St. L. Moncure said they had an admitting bureau in Norfolk which investigated indigent patients but he did not feel it should be a rule that a physician should sign the application. This would be abused and there should be other means of checking on the physician.

Dr. R. W. Miller asked the privilege of the floor for Dr. F. J. Wampler, director of the out-patient department of the Medical College of Virginia, who stated that they are trying to carry out this resolution, but it is not always possible to secure the recommendation of a doctor. When the family physician refers a patient it is usually for some specialty but it is not felt these are always justified to receive free treatment. People who are actually on relief are accepted but the clinic does try to secure the doctor's recommendation.

Dr. A. D. Hart said the same thing applied to the University of Virginia. It worked quite a hardship on some people to have to have a doctor's certificate because some communities have so few doctors or a doctor is not within reasonable distance of the patient.

Dr. Knight felt that everyone has to have a family doctor and some doctor has got to treat the patient. There is an exception in emergencies, but he felt the doctor should have a chance to sign the certificate.

Dr. Martin said his recommendation not only included the doctor but social agencies as well, but that he could insert "where practicable they should be accompanied by a certificate from their physicians", and this would cover emergencies.

Dr. Thompson cited an instance where he received a letter from one of the hospitals thanking him for referring them a patient for operation. He did not even know the man was there as it was not an emergency and he was perfectly able to pay.

Dr. Martin's resolution was adopted as presented.

Dr. Martin then presented the following resolution which was adopted:

WHEREAS there is prospect of grants of State and Federal funds for the development and extension of certain public health activities and other medical needs, and

WHEREAS these funds should be administered and distributed in accordance with certain principles laid down by this body,

THEREFORE, BE IT RESOLVED, by the House of Delegates of the Medical Society of Virginia, assembled in Danville, Virginia, this 5th day of October, 1938, that we believe the Health Department of Virginia is the proper agency to receive and distribute these funds, and

BE IT FURTHER RESOLVED, that we set up a committee of five from the Medical Society of Virginia to act as an advisory committee to the State Department of Health to the end that the best interest of the people of the State may be served in the distribution and administration of such funds.

The portion of the Medical Economics Committee report with regard to the Committee of Physicians was again presented for discussion, and Dr. Martin moved its adoption. This was seconded.

Dr. Hundley again submitted his substitute resolution that the six paragraphs be deleted, beginning with "We see no necessity" and continuing through "In support of these views we submit the following resolution". He agreed with the comment in the first part of this report. This is covered by a resolution adopted by the American Medical Association, and it would not be well for the Medical Society of Virginia to disagree with what they have passed. Everyone has freedom of speech and the Committee of Physicians, of course, had a right to express their opinion. The only criticism was in publicizing a dissenting opinion and the Committee states they did not give out this publicity.

Dr. Martin did not see any reason why this body had to agree with any action of the A. M. A. They have a perfect right to differ in the matter of policy. The committee feels that a federal department of health would be a dangerous procedure. As far as the Committee of Physicians is concerned the right of any individual physician to advocate any policy is recognized, but the right of a relatively small group to assume to speak for American Medicine is questioned. The members of the Committee of Physicians have repeatedly spoken in public and have been reported in the press on the subject of their pronouncements.

Dr. A. D. Hart said the Committee of Physicians never expressed an opinion as a committee; it was done only as individuals. He felt the Society is going out of its way to criticize physicians in its own ranks.

Dr. Carrington Williams felt Dr. Hundley's motion should be passed. He did not think the Society had a right to censure these physicians because he believed they

did a great deal toward helping the A. M. A. make their final decision.

Dr. Clarkson felt these physicians perhaps did a little more than they should have done but they should not be brought to task by this Society. It was agreed in the A. M. A. meeting to stop criticizing and mud-slinging, as this is below the dignity of the profession.

Dr. W. L. Powell, a vice-president, was asked to take the chair so Dr. Simpson could speak on the subject. He said that all of the men that talk in the interest of legislation consider some individual or some group or organization for fear they will hurt their feelings or offend them. This is a great problem that affects every individual in our land. It has a personal relation to doctors and yet hours are spent discussing how this or that or the other shall be done, where, as a matter of fact, the government and the A. M. A., are only the representatives to render a service to citizens and certainly the idea of offending should not be considered. Cooperation has taken on a new meaning in this age. When this organization was first started, it was with the idea of cooperating; now it is apparently trying to do what some organizations say instead of considering the problem before it. He hoped they would give this matter careful consideration.

Dr. Martin said this was not a personal matter and he had no criticism of any members. This kind of procedure is dangerous to the American people and any division in the ranks is going to be used as ammunition against the doctor. The criticism is aimed not at the individual but at the procedure of a smaller organization, as representing the whole profession.

A vote being taken, resulted in a tie, and the president cast the vote in favor of Dr. Hundley's resolution.

A recount was called for as it was felt some of the members of the House had failed to vote. A motion to this effect being carried, the secretary was instructed to call the roll so that all members might vote. The substitute motion of Dr. Hundley's was lost and Dr. Martin's report carried—the vote being 22-27.

Motion was made, seconded and carried that the report of the Medical Economics Committee be adopted as a whole, using the substitute in regard to the National Health Conference.

Due to the death of Dr. Fletcher J. Wright, of Petersburg, it was announced there was a vacancy on the State Board of Medical Examiners, and the following from members of the Fourth District Medical Society was adopted:

The following resolutions were unanimously adopted at the annual meeting of the Fourth District Medical Society at Blackstone, Tuesday, May 24, 1938.

1. That one, and only one, physician be recommended to the Governor of Virginia to fill the vacancy from the Fourth District on the Board of Medical Examiners caused by the death of Doctor F. J. Wright.

2. That Doctor W. B. McIlwaine, of Petersburg, be recommended to fill the said vacancy.

3. That these resolutions be referred to the Council of the Medical Society of Virginia and, through the Council, to the House of Delegates, at its next meeting, with recommendations for approval by the Council and by the House of Delegates.

The report of the Nominating Committee was then called for and Dr. I. C. Harrison, chairman, presented the following, which was unanimously adopted:

President-Elect—Dr. H. H. Trout, Roanoke.

Vice-Presidents—Dr. P. W. Miles, Danville.

Dr. S. B. Moore, Alexandria.

Dr. R. L. Phipps, Clintwood.

Secretary-Treasurer—Miss Agnes V. Edwards, Richmond.

As the term of office for Drs. Wright Clarkson and Roshier Miller as delegate and alternate, respectively, to the A. M. A., had expired, an election for these resulted in their reappointment for a term of two years.

Invitations for the 1939 meeting were extended from the Warwick and Elizabeth City County Medical Societies and the Virginia Peninsula Academy of Medicine for the Chamberlin Hotel at Old Point Comfort; from the Princess Anne County Medical Society for the Cavalier Hotel at Virginia Beach; and from the Richmond Academy of Medicine for Richmond. The latter was selected.

Dr. Hundley offered a motion of thanks to the Danville doctors for their hospitality, entertainment, and splendid arrangements for this meeting. This was seconded and unanimously carried.

Dr. Rawls then offered the following motion: That the Society endorse the work of the Virginia Cancer Foundation now caring for indigent cancer patients through cooperation with the family physician and local medical societies throughout Virginia.

Dr. Clarkson explained the difference between this Foundation and the Women's Field Army, and the motion was then adopted.

Dr. Miller stated that he had talked with Dr. J. A. White, of Richmond, shortly before coming to the meeting, and he had seemed so anxious to be able to attend. He moved that a letter be sent Dr. White expressing the regret of the Society at his inability to attend.

There being no further business, the meeting adjourned.

AGNES V. EDWARDS,
Secretary.

Auditor's Report—October 1, 1937, Through September 30, 1938

TO THE OFFICERS AND COUNCILORS,

MEDICAL SOCIETY OF VIRGINIA,
RICHMOND, VIRGINIA.

GENTLEMEN:

We have made an examination of the books of account of the Medical Society of Virginia, Richmond, Virginia,

for the fiscal year ended September 30, 1938, and submit herewith our report, consisting of the following statements and related comments:

EXHIBITS

"A" Balance Sheet.

"B" Statement of Income and Expense.

Comments

The assets and liabilities of the Society at September 30, 1938, are shown in Exhibit "A". A summary thereof, compared with that at the close of the prior year, is given below:

| | 9-30-38 | 9-30-37 | Increase Decrease* |
|---------------------|--------------------|--------------------|-----------------------|
| ASSETS: | | | |
| Cash | \$ 9,422.78 | \$ 6,516.61 | \$2,906.17 |
| Accounts Receivable | 1,801.48 | 1,932.45 | 130.97* |
| Investments—Bonds | | | |
| (At Cost) | 2,032.50 | 2,157.50 | 125.00* |
| TOTAL | \$13,256.76 | \$10,606.56 | \$2,650.20 |
| LIABILITIES: | | | |
| Accounts Payable | 577.42 | 503.24 | 74.18 |
| NET WORTH | \$12,679.34 | \$10,103.32 | \$2,576.02 |

The Income and Expenses for the fiscal year ended September 30, 1938, are shown in detail in Exhibit "B", prepared on cash receipts and disbursements basis. The operations for both the current and prior years are shown in condensed form in the following tabulation:

| | YEAR ENDED | |
|--------------------------------|--------------------|--------------------|
| | 9-30-38 | 9-30-37 |
| INCOME: | | |
| Medical Society | \$ 5,081.08 | \$ 4,942.36 |
| Medical Monthly Publication | 11,392.61 | 10,203.31 |
| TOTALS | \$16,473.69 | \$15,145.67 |
| EXPENSES: | | |
| Medical Society | \$ 4,355.60 | \$ 4,231.71 |
| Medical Monthly Publication | 9,336.92 | 8,762.96 |
| TOTALS | \$13,692.52 | \$12,994.67 |
| SURPLUS INCOME FOR YEAR | \$ 2,781.17 | \$ 2,151.00 |

The records of cash transactions for the year were checked in detail. Receipts of record were found to have been properly deposited in bank and disbursements were supported by satisfactory vouchers. Balances on deposit at the close of the year were independently confirmed, and consist of the following:

CHECKING ACCOUNT:

First & Merchants National Bank \$3,320.38

SAVINGS ACCOUNTS:

First & Merchants National Bank \$2,567.12

The Morris Plan Bank of Virginia 3,535.28

\$9,422.78

The indebtedness of members for dues and accounts receivable for advertising in and subscription to the MEDICAL MONTHLY publication are stated at collectible

values, as estimated by the Secretary-Treasurer. No attempt was made to verify these by correspondence with debtors.

Securities owned, as described on the Balance Sheet, were verified by inspection.

Provision has been made in the Balance Sheet for all ascertained liabilities of the Society at September 30, 1938.

Insurance in force, as evidenced by policies on hand, was as stated below:

| | |
|---|------------|
| Fire—Office Furniture and Fixtures | \$1,000.00 |
| Fire—Walter Reed Home, Belroi, Virginia | 1,000.00 |
| Fidelity Bond—Secretary-Treasurer | 2,500.00 |

The special trust fund for post-graduate clinical education has not been included in the Balance Sheet or elsewhere in this report, because of the restricted purpose for which it is available. The subscriptions and earnings of this fund are deposited in a savings account at First & Merchants National Bank, Richmond, Virginia, as follows:

| | |
|--------------------------------------|---------|
| Subscriptions to Fund | \$60.00 |
| Interest Earned on Deposit | 2.31 |

TOTAL—SEPTEMBER 30, 1938 \$62.31

The bookkeeping records for the year under review were found in satisfactory order.

Respectfully submitted,

SHEPHERD, JACKSON & WIGGINS,
Certified Public Accountants.

Balance Sheet—September 30, 1938

Exhibit "A"

ASSETS

CASH:

On Deposit:

| | |
|----------------------------|-------------------|
| Checking Account | \$3,320.38 |
| Savings Accounts | 6,102.40 |
| | <u>\$9,422.78</u> |

DUE FROM MEMBERS:

(Estimated Collectible Value)

| | |
|---------------------------------------|----------|
| 1938 Dues—275 @ \$5.00 each | 1,375.00 |
|---------------------------------------|----------|

ACCOUNTS RECEIVABLE:

VIRGINIA MEDICAL MONTHLY:

| | |
|---|---------------|
| For Advertising | \$ 376.48 |
| For Subscriptions (Estimated) | 50.00 |
| | <u>426.48</u> |

SECURITIES OWNED:

Bonds—Home Owners & Loan Corp.

| | |
|----------------------------|------------|
| (Par \$1,500.00) | \$1,507.50 |
|----------------------------|------------|

United States Savings Bonds (Current Redemption Value \$553.00)

| | |
|--|-----------------|
| | 525.00 |
| | <u>2,032.50</u> |

TOTAL ASSETS \$13,256.76

LIABILITIES AND SURPLUS

LIABILITIES:

For Preparation of MEDICAL JOURNAL—September, 1938, Issue

| | |
|--|-----------|
| | \$ 478.67 |
|--|-----------|

For Printing and Stationery

| | |
|--|------------------|
| | 98.75 |
| | <u>\$ 577.42</u> |

SURPLUS:

Excess of Assets over Liabilities 12,679.34

TOTAL LIABILITIES AND SURPLUS \$13,256.76

Income and Expense—Fiscal Year Ended

September 30, 1938

Exhibit "B"

MEDICAL SOCIETY OF VIRGINIA DIVISION

| | ACTUAL | BUDGET |
|--|-------------------|-------------------|
| INCOME: | | |
| Dues—From Members | \$5,003.67 | \$ |
| Interest on Securities and Savings | | |
| Accounts (½) | 49.41 | |
| Royalties on History of Medicine | 28.00 | |
| TOTAL | <u>\$5,081.08</u> | <u>\$5,060.05</u> |
| EXPENSES: | | |
| Salaries (Apportioned): | | |
| Secretary-Treasurer | \$1,800.00 | |
| Clerical Assistance | 930.00 | |
| | <u>\$2,730.00</u> | <u>\$2,730.00</u> |
| Office Rent and Telephone | 353.25 | 350.00 |
| Stationery and Office Supplies | 59.14 | 65.00 |
| Postage | 214.35 | 240.00 |
| Reporting Annual Meeting | 145.17 | 175.00 |
| Badges | 30.89 | 40.00 |
| Programs and Envelopes | 92.00 | 80.00 |
| Repairs and Replacements—Equipment | .82 | 25.00 |
| Audit Fee (Apportioned) | 30.00 | 30.00 |
| Miscellaneous Expense | 29.44 | 25.00 |
| President's Expense | 100.00 | 100.00 |
| President-Elect's Expense | | 50.00 |
| Councilors' and Officers' Expense | 35.65 | 50.00 |
| Invited Guests' Expense | 52.35 | 60.00 |
| Walter Reed Commission | 75.00 | 75.00 |
| Department of Clinical and Medical Education | 274.24 | 750.00 |
| Committee on Scientific Exhibits and Clinics | 110.05 | 110.05 |
| Committee on Medical Economics | 3.25 | 70.00 |
| Committee on Child Welfare | | 10.00 |
| Committee on Legislation | 20.00 | 25.00 |
| TOTAL | <u>\$4,355.60</u> | <u>\$5,060.05</u> |
| SURPLUS INCOME FOR YEAR | <u>\$ 725.48</u> | <u>\$ —0—</u> |

VIRGINIA MEDICAL MONTHLY DIVISION

| | ACTUAL | BUDGET |
|------------------------------------|--------------------|-------------------|
| INCOME: | | |
| Advertising | \$7,643.58 | |
| Subscriptions: | | |
| Members | \$3,335.78 | |
| Non-Members | 363.85 | |
| | <u>3,699.63</u> | |
| Interest on Securities and Savings | | |
| Accounts (½) | 49.40 | |
| TOTAL | <u>\$11,392.61</u> | <u>\$9,540.00</u> |

EXPENSES:

Salaries (Apportioned):

| | | |
|---------------------|-------------------|------------|
| Secretary-Treasurer | \$1,800.00 | |
| Clerical Assistance | 930.00 | |
| | <u>\$2,730.00</u> | \$2,730.00 |

| | | |
|--|----------|----------|
| Preparation of Journal (Including Cost of Distribution) | 6,126.65 | 6,300.00 |
| Office Rent and Telephone | 351.81 | 350.00 |
| Stationery and Office Supplies | 15.43 | 35.00 |
| Office Postage | 59.44 | 50.00 |
| Repairs and Replacements—Equip- ment | .82 | 25.00 |
| Audit Fee (Apportioned) | 30.00 | 30.00 |
| Miscellaneous Expense | 22.77 | 20.00 |

| | | |
|-------|-------------------|-------------------|
| TOTAL | <u>\$9,336.92</u> | <u>\$9,540.00</u> |
|-------|-------------------|-------------------|

| | | |
|-------------------------|-------------------|---------------|
| SURPLUS INCOME FOR YEAR | <u>\$2,055.69</u> | <u>\$ —0—</u> |
|-------------------------|-------------------|---------------|

SUMMARY OF OPERATIONS

| DIVISION | ACTUAL INCOME | ACTUAL EXPENSES | SURPLUS INCOME |
|-----------------|--------------------|--------------------|-------------------|
| Medical Society | \$ 5,081.08 | \$ 4,355.60 | \$ 725.48 |
| Medical Journal | 11,392.61 | 9,336.92 | 2,055.69 |
| TOTALS | <u>\$16,473.69</u> | <u>\$13,692.52</u> | <u>\$2,781.17</u> |

RECONCILIATION OF CASH BALANCE

| | |
|-------------------------------------|------------|
| Balance—October 1, 1937, per report | \$6,516.61 |
| Add: | |

| | |
|-------------------------------------|----------|
| Surplus Income for Year (Above) | 2,781.17 |
| Liquidating Dividend on Bonds Owned | 125.00 |

| | |
|---------------------------------------|-------------------|
| BALANCE—SEPTEMBER 30, 1938 (Exh. "A") | <u>\$9,422.78</u> |
|---------------------------------------|-------------------|

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. HAWES CAMPBELL, Venter.

President-Elect—MRS. HENRY A. LATANE, Alexandria.

Corresponding Secretary—MRS. PAUL PEARSON, Aylett.

Recording Secretary—MRS. E. LATANÉ FLANAGAN, 3413
West Franklin Street, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, 2502 Hawthorne
Avenue, Richmond.

Chairman, Press and Publicity—MRS. WILBERT E.
BUTLER, 217 East Indian River Road, Norfolk.

Report of Danville Convention.

The Sixteenth Annual Meeting of the Woman's Auxiliary to the Medical Society of Virginia was held in Danville, Va., October 4 to 6.

The Board convened for its Pre-Convention Meeting on Wednesday, October 5 at 9 A. M. at the Hotel Burton, with the President, Mrs. James B. Stone, presiding. Immediately following this Session, the

Annual Meeting opened with an invocation by the Rev. James Shelburne, Pastor of the First Baptist Church of Danville. The address of welcome from the Danville Auxiliary was given by Mrs. Roy W. Upchurch of that city, and Mrs. Stone responded on behalf of all visitors.

Following the Memorial Service for the members who had passed away since the last meeting, the minutes of the 1937 meeting were read by the Secretary and approved. Mrs. Stone then gave a report of her activities during her year as President, after which reports from Standing Committees and County Presidents were heard, giving an interesting resumé of all phases of Auxiliary work accomplished for the year. The reports of the Delegates to the San Francisco Meeting of the Auxiliary to the American Medical Association, and to the New Orleans Meeting of the Auxiliary to the Southern Medical Association brought accounts of Auxiliary work throughout the United States, and recounted the many and varied social functions put on in these two Convention Cities for the enjoyment of the visitors.

Five recommendations were brought in from the Board, and approved as follows:

First: That the Auxiliary continue the Tuberculosis Sanatorium Bed Fund, and that the name be changed and the Bed henceforth be known as the Leigh-Hodges-Wright Memorial Bed, as a memorial to Dr. Southgate Leigh of Norfolk, Dr. J. Allison Hodges of Richmond, and Dr. Fletcher J. Wright of Petersburg, the three past Chairmen of the Advisory Council, now deceased, in order that their interest in, and faithful service to the Auxiliary might be perpetuated.

Second: That the Auxiliary bear the expense of a subscription to the VIRGINIA MEDICAL MONTHLY to the Historian, Archives and Research Chairman for as long as the present incumbent continues to hold this Chairmanship, this recommendation not establishing a precedent for future Historians, unless they be widows, or there be some other unusual factors in the case.

Third: That future Chairmen of the Nominating Committee advise future Presidents-Elect of the names of prospective officers as soon as each new slate is completed, thereby enabling the President-Elect to know with whom she will work during her administration.

Fourth: That By-Laws, Article I, Section 1 (a)

be amended to read: "The outgoing President of the Auxiliary shall automatically become Chairman of the Nominating Committee, and the Committee shall consist of the Directors of this Auxiliary".

Fifth: That a State Membership Chairman be appointed each year by the President.

Following these recommendations, Mrs. Stone announced that the Williamsburg-James City County Auxiliary had won the Membership Trophy this year on the basis of a fifty per cent increase in membership, and the silver vase was presented the Delegate from that Unit. Special commendation was given the Norfolk Auxiliary on their splendid membership increase this year, this Auxiliary having the largest number on its roll in the State.

Mrs. Franklin D. Wilson of Norfolk, Chairman of the Nominating Committee, brought in the following slate of officers for the coming year, and same was unanimously accepted: President, Mrs. Hawes Campbell, Venter; President-Elect, Mrs. Henry Augustine Latané, Alexandria; Vice-Presidents, Mrs. G. W. Holland, Eastville, Mrs. T. Brantley Henderson, Williamsburg, Mrs. Thos. Hunnicutt, Jr., Newport News, Mrs. F. O. Plunkett, Lynchburg; Recording Secretary, Mrs. E. Latané Flanagan, Richmond; Corresponding Secretary, Mrs. Paul Pearson, Aylett; Treasurer, Mrs. Reuben F. Simms, Richmond; Parliamentarian, Mrs. Joseph Bear, Richmond; and Archives Chairman, Mrs. Southgate Leigh of Norfolk.

Following the election of officers the morning Session was adjourned in order that the members might attend the Annual Auxiliary Luncheon at the Danville Country Club. Dr. Alex. F. Robertson, Jr., President-Elect of the Medical Society of Virginia, was the guest speaker on this occasion, and brought a timely message on the inroads that are being made today in the Medical Profession by Socialized Medicine. Dr. P. W. Miles of Danville, President of the host Society, brought greetings to the Auxiliary from that body. Dr. P. St.L. Moncure of Norfolk, Chairman of the Advisory Council, made many interesting remarks in the "Auxiliary Wife", after which Dr. Hawes Campbell of Venter was introduced, and gave a delightful impromptu talk.

The program was then turned over to Mrs. Franklin D. Wilson, who conducted the installation ceremony, inducting into office the duly elected officers. The gavel was presented by Mrs. Stone to Mrs. Hawes Campbell, whose inaugural message out-

lined her hopes for the Auxiliary for the coming year.

The meeting then adjourned and the Board Members attended the Post Convention Executive Session held on the Club veranda overlooking the picturesque Dan River.

The social activities were delightful in every respect. Wednesday evening, October 5, at 6:30 P. M. the doctors and their wives attended a dinner at the Armory after which they were entertained by a Floor Show imported from New York. On Thursday morning, October 6, the visiting ladies had the treat of attending a "Tobacco Auction", visiting several lovely gardens, and taking a drive about the city. Also that morning a Golf Tournament was held for the visiting golf enthusiasts, following which the local doctors' wives were hostesses at a delicious luncheon at the Danville Golf Club.

In the language of Mr. Winchell, an orchid to the newly organized Danville Auxiliary for the cordial reception accorded the visitors! Because of their untiring efforts, Danville will long be remembered as one of the most delightful Convention Cities.

J.W.S.

The Williamsburg-James City Auxiliary

Had its September meeting at the home of Mrs. J. M. Henderson in Williamsburg. Twelve members were present and Mrs. W. E. Croxton became a new member. Mrs. T. V. Henderson, president, presided, and plans were made for attending the State meeting in Danville. At the November meeting, officers for the coming year will be elected. The program, under the direction of Mrs. J. B. Porterfield, included an interesting talk by Mr. Neblett, State milk sanitarian, of Richmond. Upon adjournment, a social hour followed.

(MRS. L. V.) MABEL R. HENDERSON,
Reporter.

The Southern Medical Association

Will meet in Oklahoma City, November 15-18. The Norfolk and Western Railway Company has authorized reduced fares. In the event there is a sufficient number going on any one train and date, this company will operate a through Pullman for your accommodation.

(MRS. WILBERT E.) RUBY D. BUTLER,
Chairman, Press and Publicity.

The Woman's Auxiliary to the Norfolk County Medical Society

Met at the home of Mrs. C. J. Divine, retiring President, Friday October 14 with a very good attendance.

Mrs. Millard B. Savage was installed as president, Mrs. Herbert W. Rogers, president-elect; Mrs. R. M. Reynolds, Mrs. T. Elmore Jones, and Mrs. J. W. Reed, vice-presidents; Mrs. C. M. McCoy, recording secretary, Mrs. James W. Anderson, corresponding secretary; Mrs. K. W. Howard, treasurer; Mrs. W. P. Adams, assistant treasurer; Mrs. George Renn, historian and Mrs. M. N. King, parliamentarian.

At the conclusion of the meeting, Mrs. Divine entertained the members at a delightful tea.

Truth About Medicine

In addition to the articles previously enumerated the following have been accepted by the council on Pharmacy and Chemistry of the American Medical Association: Gilliland Laboratories, Inc.

Diphtheria Toxin—Antitoxin Mixture, 0.1 L+ (Goat). Lederle Laboratories, Inc.

Typhoid Combined Vaccine, 20 cc. vial package. Eli Lilly and Company

Ampules Pentobarbital Sodium—Lilly, $7\frac{1}{2}$ grains (0.5 Gm.).

Protamine, Zinc & Iletin (Insulin, Lilly), 80 units, 10 cc. Parke, Davis & Company

Antipneumococcic Serum (Felton) Type II, Refined and Concentrated.

Soluble Gelatin Capsules Parke, Davis & Company's Standardized Cod-Liver Oil, 2.0 Gm.

E. R. Squibb & Sons.

Immune Globulin (Human) (Placimmunin).

Protamine Zinc Insulin—Mulford, 80 unit, 10 cc.

New and Nonofficial Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Typhoid Vaccine.—This bacterial vaccine made from the typhoid bacillus (New and Nonofficial Remedies, 1938, p. 429) is also marketed in vials of 50 cc. containing 1,000 million killed typhoid bacilli per cubic centimeter. The Gilliland Laboratories, Inc., Marietta, Pa.

Typhoid Combined Vaccine (Prophylactic).—This bacterial vaccine made from the typhoid bacillus and the paratyphoid "A" and "B" bacilli (New and Nonofficial Remedies, 1938, p. 431) is also marketed in packages of one 20 cc. vial containing 1,000 million killed typhoid bacilli, 500 million killed paratyphoid A bacilli and 500 million killed paratyphoid B bacilli per cubic centimeter. Lederle Laboratories, Inc., Pearl River, N. Y.

Propaganda for Reform

Pathologic Effects of Elixir of Sulfanilamide (Diethylene Glycol) Poisoning: A Clinical and Experimental Correlation: Final Report.—In a report by E. M. K. Geiling and Paul R. Cannon, published under the auspices of the American Medical Association Chemical Laboratory, the similarity between the clinical course and pathologic picture of the fatal human cases and that observed by these investigators in experimental animals affords conclusive proof that the chief toxic agent in Elixir of Sulfanilamide was the diethylene glycol. They showed this substance to have a cumulative effect. Evidently the time interval between doses and the concentrations in which the elixir was recommended for human use exceeded the capacity of the body to handle the drug without producing serious injury. Experiments are now in progress to determine the manner of excretion and the levels at which different species of animals can handle diethylene glycol. The fact that increasing numbers of new chemicals are being introduced into therapeutics serves to direct attention anew to the necessity of adequate toxicologic studies on such compounds which are to be used in medical practice. It is only by precautions of this sort that future tragedies similar to the elixir episode will be avoided. In the examination of a drug with a view to its use in therapeutics, the following conditions are essential: 1. If at all possible, the exact composition (qualitative and quantitative) should be known; or, if not obtainable, the detailed method of preparation of the product. 2. Acute toxicity studies on a sufficient number of laboratory animals of different species should be made. 3. Chronic toxicity experiments at varying dosage levels and with different species must be performed in order that any possible cumulative effect of the drug may be noted. 4. Careful and frequent observations of the animals are necessary, so that a composite picture of the clinical course is available. 5. Careful pathologic examination of the tissues with appropriate stains is necessary. 6. Effects of the drug on animals with experimental lesions of various important excretory or detoxifying organs, especially of the kidneys and liver, should be studied. 7. The rate of absorption and elimination of the drug, its path and manner of excretion, and the concentration levels in the blood and tissues at varying times after administration must be determined. 8. The possible influence of the presence of certain foodstuffs or drugs should be noted. For example, magnesium sulfate should not be administered to a patient undergoing treatment with sulfanilamide. 9. Careful examinations for idiosyncrasies or untoward reactions should be made. Many human lives have been sacrificed by the failure to meet the standards of these preliminary tests and many more lives will be sacrificed if such standards are not put into effect. Any essential compromise with these requirements will inevitably exact a toll of deaths or injuries among the public. The life and safety of the individual should not be subordinated to the competitive system of drug exploitation. The Elixir of Sulfanilamide catastrophe should once again serve as a warning to physicians who so readily prescribe unofficial drugs. (*J. A. M. A.*, September 3, 1938, p. 919.)

Virginia Medical Monthly

Founded by LONDON B. EDWARDS, M. D., April, 1874

Owned by MEDICAL SOCIETY OF VIRGINIA since November, 1919

WYNDHAM B. BLANTON, M. D., *Editor*

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All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Monthly, 1200 East Clay Street, Richmond, Va.

This journal is not responsible for the opinions and statements of its contributors.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Subscription Price: \$2.00 per annum in advance. Single Copies 25c.

VOLUME 65

NOVEMBER, 1938

No. 11

Editorial

Our President.

Alexander Farish Robertson, Jr., was born in Staunton, Virginia, December 6, 1892. He was graduated from Woodberry Forest in 1911, and thereupon entered the University of Virginia for pre-medical work. After four years at the University College of Medicine—Medical College of Richmond, Virginia, he graduated in 1916. In that year he was commissioned as First Lieutenant, M.C., for duty on the Mexican border. The following two years were devoted to an internship at Kings County Hospital, Brooklyn, N. Y. In June, 1918, he was graduated from the Army Medical School, Washington, D. C., and during 1918-19 he held a commission as First Lieutenant in the Medical Reserve Corps.

For several years he was a member of the Virginia State Board of Medical Examiners.

Dr. Robertson is a past-President of the Augusta County Medical Association and of the Medical Association of the Valley of Virginia. He is a member of the Medical Society of Virginia and the American Medical Association, and a Fellow of the American College of Physicians.

The foregoing data briefly cover his academic and professional background and indicate that the Medical Society of Virginia has chosen as its executive head one eminently well equipped for that important office. But those who have known him personally

for many years appreciate qualities that mean much more than degrees and honors. His fine character, innate honesty, and determination to equip himself with the best in medicine to be made available to his patients are characteristics that have endeared him to his many friends.

Though born of one of Virginia's distinguished families, and having unusual cultural advantages, he has maintained a democratic outlook and kept the common touch with his patients including the indigent and ignorant. Truly he may well be termed, in its finest sense, a "Virginia thoroughbred."

P.S.S.

A Small Book on Endocrinology.

Confusion in spite of progress in the field of endocrinology continues. Large works upon the subject exist, but with increasing knowledge changes have come so rapidly that many of them are out of date before they are off the press. Proprietary houses, capitalizing the results of the latest preliminary animal experimentation, crowd the market with glandular preparations courting the confidence of the medical profession under a hundred strange and impressive names, and yet standards of potency, dosage, technique of administration and the means of diagnosis are still baffling questions to the general practitioner.

It is a pleasure to encounter a simple, brief and

clear handbook of *Endocrine Therapy in General Practice* by Elmer L. Severinghaus (Year Book Publishers, Inc.). This volume very successfully meets its aim of assisting physicians to prescribe more rationally the various potent derivatives of the glands of internal secretion. Tomorrow it may be out of date, but today it presents to the average doctor in succinct form all he needs to know about the subject.

Did the Mayos Discover it?

Last week when Russell M. Wilder, M.D., of the Mayo Clinic delivered an address on *Industrial Laboratories and Clinical Research*, he took occasion to extol the Mayos and their clinic as exemplifying the best in modern medicine in that they have solved for themselves the conscience-stricken element of money-making in medicine. One gets the idea that Dr. Wilder believes the Mayos have discovered a new technic for settling the difficult socio-economic problem of medicine. One certainly gets the impression from him that the Mayo Clinic, in limiting the amount of money that its physicians can make and returning to the clinic and the care of patients all in excess of this amount (he doesn't indicate at what level money-making ceases), has placed itself in the very forefront of advanced New Deal thinking. We are inclined to believe, however, that doctors from time immemorial, in the care of charity patients, in the expenditures they, as individuals, are constantly making to improve their basic armamentarium, have been doing this very same thing with no noise and with lower limits of earnings. It seems to us well to remember that group recognition of the social obligation of medicine is new only in the immensity of the

figures often involved today and in the greater news interest attached to moral rectitude when practiced by groups than when practiced by individuals. Group goodness is good, but there is no reason to brag about it.

The Death of Dr. E. C. Levy.

The death of Dr. E. C. Levy, long Health Commissioner of Richmond, recalls to mind the services of a man well trained, peculiarly endowed with public health consciousness, faithful to his duties, and fearless in his stand. It has been some years since Dr. Levy watched over the health of the capital of Virginia, but during all this time his memory has been fragrant because of his efficiency and devotion to his work.

Regena Beck, Author.

Medical books written by Virginians are rare enough to be news. For the second time within the last twelve months we have occasion to notice a medical book written by a Virginia woman. Regena Cook Beck, pathologist of Richmond, has just produced a 389-page laboratory manual on *Hematologic Technic*, written primarily for technicians but of distinct interest and useful-



ALEXANDER F. ROBERTSON, Jr., M. D.,
President, Medical Society of Virginia.

ness to medical men in general, especially those concerned with laboratory procedures. It is a clear, concise treatise, jacketed in a business-like suit of grey, from the press of W. B. Saunders Company, Philadelphia.

We wish to congratulate Dr. Beck upon her admirable little book and to express the hope that she will turn her hand to other fields in which technicians labor and in which other such handbooks would be of distinct value. A manual for technicians is needed, for instance, in the field of allergy.

J. B.

Books about doctors and doctoring sell well. The public is disconcertingly interested in medicine and in the ways and means of doctors. It wishes to see the inside of the operating room, even the frank pictures of the actual stages in labor; and it is anxious to hear what doctors don't tell. It has been fed so many medical memoirs that it has long since forgotten the glorified Stevensonian M. D. who stood above the common herd. In this day of gossip literature it demands the private life of its one-time hero, the family physician; and not even he can remain a hero *sans habille*. *J. B. Murphy, Stormy Petrel of Medicine*, (G. P. Putnam's Sons) is another book for this rabid public.

It is also a book for doctors. It has a message for each of us, and it has a warning for the medical genius, the medical slave driver, the medical egotist, the medical publicity hound. No doctor can read the life of J. B. understandingly without personal profit and the formation of fresh resolutions concerning his professional conduct and his way of life. This volume tells all that Murphy achieved. It also tells all that he did not achieve, and in terms of human satisfaction this was even more. Success came to him by work plus genius plus ego plus publicity. The price he paid for success was friendships forfeited, enemies made, charges faced of advertising, of fee splitting, of stealing patients, and of chasing the damn guinea.

When we picked up this life of J. B. Murphy we doubted if he deserved the 306 pages of biographical recognition which Loyal Davis, the present professor of surgery at Northwestern, has given him. For confirmation of our impressions of Murphy's relatively insignificant place in medicine we turned to Packard's two volumes on the history of medicine in the United States to find a bare half page devoted to him, and to Garrison's book on the history of medicine to find he is dismissed even more summarily. But now that we have read about this stormy petrel we are glad the account is no shorter.

J. B.'s memory is still green in the minds of the older generation of doctors. For most of them he was the great Chicago surgeon, the pioneer in abdominal surgery, the one man next to Reginald Fitz who did most to popularize the surgical treatment of appendicitis, the inventor of the Murphy button, the first American advocate of pneumothorax, the pathfinder in sutures of blood vessels and surgery

of the joints, a topnotcher, a bewhiskered Beau Brummel who early achieved foreign recognition and acclaim, occupied the highest positions of honor in this country, attracted students to his clinics from all over the world and while doing so laid aside a fair competency—two million dollars.

For those doctors who lived in Chicago and who may be called his neighbors and contemporaries, his name was anathema, so much so that although he was a member of most of the important medical and surgical societies in America, a president of the American Medical Association, and a Fellow of the Royal College of Surgeons, he was not elected to membership in the Chicago Medical Society until just before his death.

How this genius for new ideas, this indefatigable worker, this widely acclaimed teacher, won recognition abroad, but envy, hatred and resentment in his immediate vicinity at home is the business to which most of Davis's pages are addressed. The author does not try to excuse his subject. He does not deify him. He explains him by telling the truth as he knows it about his Irish immigrant frontier forbears, his wealthy in-laws, his methods and his objectives, personal and professional. If the biography is not deserved by Murphy's permanent professional achievements it is more than justified by his colorful personality.

The book may prove too strong a meat for the poor medical students who throng our halls of learning. It will doubtless lead every one of them to try to marry a rich Junior Leaguer.

A New Drug In Epilepsy.

As evidence of the fact that neurological research of a practical and productive character has at last got under way there is not only the reported success of malarial and artificial fevers in paresis, and of insulin and metrazol in schizophrenia and other psychoses, but there is now the apparent success of a new drug in epilepsy.

It has been estimated that the institutional care of the epileptics of this country amounts to about twelve million dollars a year. Hitherto very little research has been directed toward better understanding of the baffling problem of this disease. As far as is known, systematic investigation of epilepsy has been carried on only at Harvard University Medical School. Here for fifteen years Dr. W. G. Lennox has prosecuted his studies at the Boston City Hos-

pital where he has access to ample clinical material. The Rockefeller Foundation, which for the last few years has interested itself in the development of teaching in psychiatry and neurology, and in the development of research in these subjects—to the tune of \$1,392,100 in 1937—has appropriated more than \$52,000 towards Dr. Lennox's investigations. The work continues with some emphasis also on the allied disorders of narcolepsy and migraine. The mechanism of seizures, their point of origin in the brain, as well as the pathway of their spread, are being attacked through a new technique, electroencephalography. As a by-product of this study Merritt and Putnam reported at the last meeting of the American Medical Association the favorable action of diphenyl hydantoin (dilantin), a derivative

of glycolyl urea, analogous to the barbiturates, with no hypnotic but with a strongly anticonvulsive action.

It is said that this is the first time that a remedy in epilepsy has been discovered by careful scientific selection, more than one hundred drugs having been tried experimentally upon animals, a procedure which was made possible by Putnam and Merritt's previously developed standardized method of producing convulsions in animals. Dilantin gave surprisingly good results in one hundred consecutive patients who had previously been treated unsuccessfully by the older methods. When administered in .1 gm. doses three times a day it gave complete relief in 50 per cent of grand mal epilepsy. There are practically no contraindications to dilantin.

Department of Clinical and Medical Education of the Medical Society of Virginia

Pediatrics.

Since the last report was printed, Dr. Robert B. Hightower, instructor in Pediatrics, has completed two circuits, one in the Clinch Valley area and another in southwestern Virginia.

The first circuit was composed of Buchanan, Dickenson, Russell and Tazewell Counties. Meetings were held at Lebanon, Grundy, Richlands and Tazewell. The following doctors were in attendance upon the course:

GRUNDY

| | |
|---------------------------|--------------------|
| Dr. T. C. Sutherland, Sr. | Dr. W. E. Vermilya |
| Dr. T. C. Sutherland, Jr. | Dr. C. H. Reagan |
| Dr. R. L. Phipps | Dr. W. A. Trivett |
| Dr. Leo Halley | Dr. W. E. Bundy |
| Dr. H. O. Staley | Dr. W. R. Berke |
| Dr. Wycoff | Dr. W. C. Jackson |
| Dr. E. V. Famiglietti | Dr. J. P. Williams |
| Dr. J. S. Richardson | Dr. H. N. Boden |
| Dr. W. A. Carr | Dr. G. D. Rackley |
| Dr. D. F. Love | Dr. J. H. Smith |

LEBANON

| | |
|----------------------|------------------|
| Dr. W. C. Elliott | Dr. C. B. Greear |
| Dr. James W. Elliott | Dr. O. S. Burns |

RICHLANDS

| | |
|--------------------|--------------------|
| Dr. A. D. Parsons | Dr. G. C. Williams |
| Dr. J. P. Williams | Dr. Salmon |
| Dr. W. A. Seawell | Dr. V. A. Turner |

TAZEWELL

| | |
|------------------------|------------------------|
| Dr. P. D. Johnston | Dr. J. William Shawver |
| Dr. Mary E. Johnston | Dr. J. W. Witten |
| Dr. H. C. Davis | Dr. W. I. Painter |
| Dr. J. N. Higginbotham | |

The second circuit covered the counties of Pulaski, Bland, Montgomery and Giles, with some doctors attending from Floyd. Meetings were held at Pulaski, Christiansburg, Blacksburg and Pearisburg. The doctors attending these meetings are listed below:

BLACKSBURG

| | |
|-------------------|------------------------|
| Dr. F. K. Lucas | Dr. Elizabeth Saunders |
| Dr. D. S. Phlegar | Dr. F. B. Huffman |
| Dr. C. F. Manges | |

CHRISTIANSBURG

| | |
|------------------------|-----------------------|
| Dr. A. M. Showalter | Dr. W. K. Lloyd |
| Dr. S. H. Nixon | Dr. T. L. Gemmill |
| Dr. W. W. Fuller | Dr. S. D. Carey |
| Dr. F. C. Bedsaul | Dr. Scott |
| Dr. C. F. Manges | Dr. R. H. Grubbs |
| Dr. Elizabeth Saunders | Dr. O. A. Weatherly |
| Dr. R. M. Dehart | Dr. J. J. Giesen |
| Dr. H. S. Smythe | Dr. H. L. Dean |
| Dr. T. J. Clarke, Jr. | Dr. H. D. Fitzpatrick |

PEARISBURG

| | |
|-------------------|--------------------|
| Dr. W. C. Caudill | Dr. H. G. Johnston |
| Dr. L. B. Lowe | Dr. J. W. Miller |
| Dr. E. S. Carr | Dr. S. A. Tuck |
| Dr. M. C. Newton | |

PULASKI

Dr. D. S. Divers Dr. R. H. Woolling
 Dr. H. M. Kelso Dr. R. F. Thornhill
 Dr. C. W. Hickam Dr. W. I. Owen
 Dr. R. D. Smith Dr. H. R. Farley

Dr. W. W. Cummings

These two circuits were considered especially successful due to the fact that the doctors freely called upon Dr. Hightower for consultations. The group in Giles County were so pleased with the course and Dr. Hightower's services that they have requested his return for a week beginning November 14.

At the present time Dr. Hightower is conducting a course in the counties of Botetourt, Rockbridge and Alleghany, to which the doctors from Craig and Bath Counties have been invited. Meetings are being held at Fincastle, Clifton Forge, Covington and Lexington.

Internal Medicine.

As was previously announced in these columns, arrangements are now being made for a number of short postgraduate courses in Internal Medicine to be held in various parts of the State. At the request of the Southwestern Virginia Medical Association a course has been arranged at Wytheville, to begin on October 27. The instructors in this course are members of the University of Virginia Medical School Faculty. The local committee charged with making arrangements for the course consists of Dr. E. M. Chitwood, Chairman, Dr. Charles Fox Graham and Dr. C. D. Moore. The program of meetings is as follows:

THURSDAY, OCTOBER 27

AFTERNOON SESSION AT 4:00 P. M.

The Treatment of Congestive Heart Failure with Especial Reference to Diuresis. Dr. J. Edwin Wood.

Round Table Discussion.

Dinner at 6:00 P. M.

EVENING SESSION AT 7:00 P. M.

Acute Nephritis—Treatment and Outlook. Dr. J. Edwin Wood.

Round Table Discussion.

THURSDAY, NOVEMBER 2

AFTERNOON SESSION AT 4:00 P. M.

Diseases of the Thyroid, Suprarenal and Parathyroid Glands—Classification, Diagnosis and Treatment.

Dr. H. B. Mulholland.

Round Table Discussion.

Dinner at 6:00 P. M.

EVENING SESSION AT 7:00 P. M.

The Modern Conception of Deficiency Diseases and Their Treatment. Dr. H. B. Mulholland.

Round Table Discussion.

The Lynchburg Academy of Medicine has requested a similar course to be held in that city. Arrangements are now being made for this and the course should begin at some time in the near future.

Local Societies.

Increasingly, the Department of Clinical and Medical Education will depend upon local societies making requests for postgraduate courses. Every effort will be made to meet these requests, whether they be for courses in internal medicine or other subjects. Usually the instructors will be selected from the faculties of the two medical colleges of Virginia but in some instances general practitioners from Virginia and nearby states may be called upon. An attempt will also be made to provide speakers for the programs of local societies whenever the request is made. These should be addressed to the Executive Secretary, Box, 1487, University Station, Charlottesville, Virginia.

G. B. ZEHMER,
Executive Secretary.

Proceedings of Societies

The Southwestern Virginia Medical Society

Held its regular Fall meeting in Blacksburg, September 22, with the president, Dr. Philip S. Smith of Abingdon, presiding. The scientific program included papers by Dr. W. H. Malan of Dublin, Dr. W. H. McCarty of Marion, Dr. W. A. Porter of Hillsville, Dr. R. M. DeHart of Christiansburg, Dr. H. W. Smeltzer of Abingdon, and Drs. A. M.

Groseclose, E. G. Gill and K. D. Graves of Roanoke. Several new members were received into the Society at the business session and the following elected officers for the coming year: President, Dr. H. W. Bachman, Bristol; vice-president, Dr. C. F. Manges, Blacksburg; and secretary-treasurer, Dr. James P. King (re-elected), Radford. Dr. P. S. Smith was elected to fill the vacancy on the Executive Com-

mittee, and the following were elected to the Judiciary Committee: Dr. C. R. Woolwine, Blacksburg; Dr. Hugh H. Trout, Roanoke; Dr. F. H. Smith, Abingdon; Dr. A. M. Showalter, Christiansburg; and Dr. R. H. Woolling, Pulaski.

Following the scientific and business sessions, a banquet was held in the Faculty Apartment, with seventy members in attendance. The invocation was given by Rev. J. A. Johnson and the address of welcome by Dr. I. D. Wilson of the V.P.I. faculty. Dr. A. M. Showalter responded. Dr. Smith gave his presidential address and this was followed with an address by Dr. Hugh H. Trout of Roanoke. The guest speaker, Dr. A. M. Shipley, was unable to attend because of illness. The next meeting will be held in the early Spring.

The Alexandria Medical Society

Held its regular monthly meeting at the George Mason Hotel on Thursday, October 13, at 9:00 P. M. Twenty-six members of the society were present.

After completion of the business session the society was addressed by Dr. Lewis C. Ecker of Washington, D. C., on the subject "A Review of Hypertension." This was most interesting and instructive throughout.

Visiting physicians are most cordially invited to attend these meetings which are held on the second Thursday of each month. Dr. C. L. Fifer is President and Dr. C. E. Arnette, Secretary-Treasurer.

During the course of the meeting resolutions (which appear elsewhere in this issue) were passed upon the death of the late Dr. Hugh McGuire of that city.

Hanover County Medical Society.

This Society held its regular bi-monthly meeting in Ashland on the evening of October 11, with the president, Dr. Hawes Campbell, Jr., of Hanover, presiding. Dr. Frank L. Hughes of Ashland is secretary. Dr. J. A. Wright, Jr., of Doswell was elected to membership. Members discussed hospitalization for indigents in the county, the clinics, and transacted routine business. The next meeting is scheduled for December 13.

The Lynchburg Academy of Medicine

Held its regular meeting in the Elks' Club, October 3 with the president, Dr. Elisha Barksdale, presiding.

To allow our guest speaker, Dr. Hugh Trout of

Roanoke more time the business session was dispensed with.

Dr. Trout presented a very educational and complete account of diagnostic problems in his personal observation in acute appendicitis, his subject being "Some Mistakes in Diagnosis of Acute Appendicitis". This was closely followed and thoroughly enjoyed by the Academy. Drs. Peters, Barksdale, and Hurt discussed the paper.

C. E. KEEFER,
Secretary.

The Medical Association of the Valley of Virginia

Met on September 29, at the Stonewall Jackson Tavern, in Staunton. Dr. R. Finley Gayle, Richmond, was the invited guest and spoke on "The Treatment of the Psychoneurotic Individual". Other papers were "Functional Gastro-Intestinal Diseases" by Dr. H. G. Hudnall, Covington; "Some Observations on the Treatment of Thyroid Disease" by Dr. R. P. Bell, Staunton; "Results of Diet Table for College Students" by Dr. Rachel Weems, Harrisonburg; "A Preliminary Report on the Value of Roentgen Pelvimetry and Foetal Cephalometry in Obstetrical Practice" by Drs. W. M. Phelps and C. W. Rodgers, Staunton; and "The Treatment of Diabetic Coma" by Dr. J. B. McKee, Winchester.

Dr. R. P. Bell, Staunton, is president of this Association and Dr. Alex. F. Robertson, Jr., Staunton, secretary.

The Northhampton County Medical Society

Met at Eastville, on October 12. The outstanding feature of the program was a round table discussion on Sulfanilamide, which was opened with an excellent paper by Dr. W. J. Sturgis, of Nassawadox.

Dr. W. Y. Garrett, new head of the Northhampton County Health Unit, presented his program of activities.

The Society voted in favor of the establishment of three or more clinics for the treatment of syphilis among the indigent, these to be under the control of the Society and all patients referred.

Dr. J. M. Lynch, delegate to the Danville meeting of the State Society, made a report on the recent session.

W. CAREY HENDERSON,
Secretary.

Roanoke Academy of Medicine.

The Academy held its first meeting for the Fall at Hotel Roanoke, on October 3, and at this time new officers elected at the May meeting were installed—Dr. W. W. S. Butler as president and Dr. A. C. Davis as secretary. Dr. Butler gave an address on "The Syphilis Problem in Roanoke", after which there was a short business session. Following adjournment, refreshments were served.

The Clinch Valley Medical Society

Held its meeting on September 24 at Appalachia,

under the presidency of Dr. R. L. Phipps, Clintwood. This was an excellent meeting and well attended. Drs. J. Edwin Wood and Wm. H. Parker of the University of Virginia, and Dr. F. H. Smith, Abingdon, were the invited speakers.

Dr. E. P. Cox, Norton, was elected president for the coming year, and Drs. V. W. Quillen, Nickelsville, and T. C. Sutherland, Haysi, vice-presidents. Dr. C. B. Bowyer, Stonega, was re-elected secretary-treasurer.

The spring meeting of this Society will be held in Norton.

News Notes

A Pleasant Memory.

The Sixty-ninth annual meeting of the Medical Society of Virginia in Danville, October 4-6, has proved a pleasant memory for all who were able to attend and much credit is due Dr. I. C. Harrison and his very able committee for the splendid way in which they handled arrangements. There was a registered attendance of four hundred and thirty-two doctors in addition to exhibitors and ladies. A feature out of the ordinary on the opening evening was the presence of the Honorable James H. Price, Governor of Virginia, who was in Danville for a conference that day and by invitation addressed the Society briefly.

The invited guests, Dr. William J. Mallory of Washington, D. C., and Dr. Frederick A. Willius of Rochester, Minn., gave excellent addresses. In addition to papers presented in the scientific sessions, there were several Round Table discussions which were well attended and of great interest. The scientific and technical exhibits were of a high order, many members stating that they were the best ever had by the Society. The dinner on Wednesday evening, with a floor show from New York and a dance afterwards, added greatly to the pleasure of members and the ladies with them. In the golf tournament, it was announced that Dr. W. M. Phipps of Hopewell, Dr. C. F. Manges of Blacksburg, and Dr. M. A. Johnson, Jr., of Roanoke, shared top honors.

Dr. Alexander F. Robertson, Jr., of Staunton succeeded to the presidency and Dr. Hugh H. Trout of Roanoke was named president-elect. The vice-presi-

dents are Dr. P. W. Miles of Danville, Dr. S. B. Moore of Alexandria, and Dr. R. L. Phipps of Clintwood. It was voted to hold the 1939 meeting in Richmond. Minutes of the meeting in this issue of the MONTHLY will furnish further details.

The Virginia Orthopedic Society

Held its annual meeting in Danville on Wednesday, October 5.

Dr. C. C. Coleman of Richmond presented a very scientific and instructive paper on "Neurosurgical Causes of Low Back Pain and Sciatica" and Dr. H. Page Mauck opened the discussion on this.

Dr. Roy M. Hoover of Roanoke was elected president, Dr. H. H. Wescott, also of Roanoke, vice-president and Dr. Bernard H. Kyle of Lynchburg was re-elected secretary-treasurer.

Dr. Foy Vann of Norfolk was last year's president.

The Virginia Pediatric Society

Held a luncheon meeting at Hotel Danville, October 5, at the time of the State Society meeting. In addition to twenty-two members, there were present four visitors, Dr. Wilburt C. Davison and Dr. J. M. Arena from Duke University, Dr. Robert Hightower, lecturer for the Department of Clinical Education, and Mr. Hallum, of Mead Johnson & Co. The president, Dr. W. A. McGee, presided. Dr. F. D. Wilson, as chairman, reported the activities of the Child Welfare Committee.

The following officers were elected: Dr. W. W. Waddill, Jr., University, president; Dr. Leta White, Petersburg, vice-president; and Dr. J. M. Bishop,

Roanoke, re-elected secretary-treasurer. Several doctors were admitted to membership at this time. A clinical meeting will be held in April or May, 1939.

Practically all of the members attended the Round Table on "Allergy in Infants and Children" and were very much pleased with the discussion.

The Virginia Obstetrical and Gynecological Society

Met at the Hotel Danville, Danville, on October 5, with twenty active members present. The guest speaker was Dr. Louis H. Douglass, Professor of Obstetrics at the University of Maryland, who presented a very interesting and instructive paper on the "Problem of the Posterior Occiput", which was illustrated by lantern slides and charts. Conservative treatment of the occiput posterior was advocated by Dr. Douglass, with delivery in that position as the safest procedure.

Following a delightful dinner, the following officers for 1939 were elected: President, Dr. C. J. Andrews, Norfolk; vice-president, Dr. H. Hudnall Ware, Richmond; and secretary-treasurer, Dr. Richard B. Nicholls, Norfolk. Dr. F. O. Plunkett and Dr. E. S. Groseclose, both of Lynchburg, are retiring president and secretary, respectively.

Dr. Charles R. Robins of Richmond and Dr. Bayard Carter of Duke University were elected to honorary membership, and Drs. Lewis M. Allen, of Winchester, Meyer Viitsky of Richmond, and Harvey G. Bland of Newport News, were elected to active membership.

The Virginia Radiological Society

Held its annual luncheon on October 5 in connection with the State Society meeting. Fourteen members were present in addition to the guest speaker of the Round Table, Dr. B. R. Kirklin of the Mayo Clinic. The same officers were re-elected for the coming year: Dr. Fred M. Hodges of Richmond, president; and Dr. V. W. Archer of University, secretary-treasurer. The following new members were elected: Dr. A. K. Wilson, Norfolk; Dr. W. P. Gilmer, Clifton Forge; Dr. R. A. Berger and Dr. Charles D. Smith, both of Richmond.

Dr. B. R. Kirklin, head of the Department of Radiology, Mayo Clinic, gave a talk on Disease of the Stomach at the Round Table on October 5, which was discussed by many of the large audience.

The Virginia Urological Society

Met in Danville, October 5, at a luncheon meeting, with the president, Dr. W. W. S. Butler of Roanoke, presiding. The following officers for 1938-1939 were elected: President, Dr. Lawrence T. Price of Richmond; vice-president, Dr. A. A. Creecy of Newport News; and secretary-treasurer, Dr. Linwood D. Keyser (re-elected) of Roanoke.

After some discussion, a motion was unanimously adopted that this Society would prefer hereafter to have its scientific program at the time of the annual dinner or luncheon meeting rather than in the form of the Round Table discussion as, for the past two years, as its Round Table had been attended only by its own members. It was emphasized, however, that other members of the State Society interested in urological problems would be welcome at the scientific sessions.

Virginia Section of the American College of Physicians.

Thirty-three members attended the luncheon meeting of the Section in Danville on October 5. No special program was presented, the purpose being mainly a social get-together, as clinical programs will be held during the year. At this time, Dr. T. Dewey Davis was elected president and Dr. C. M. Caravati, secretary. Both are of Richmond and succeed Dr. J. W. Preston and Dr. George B. Lawson, respectively, of Roanoke.

The Southern Medical Association

Will hold its thirty-second annual meeting, in Oklahoma City, November 15-18, under the presidency of Dr. J. W. Jervey, Greenville, S. C.

"Oklahoma City Day" will be the feature on the 15th, at which time a program of short clinical presentations by Oklahoma City physicians will be given. The nineteen sections and five conjoint meetings will begin on Wednesday and continue through Friday. The President's address will be given on Wednesday, followed by the President's reception and ball. Thursday will be the time for alumni reunion dinners.

All scientific sessions and exhibits will be held at the Municipal Auditorium. This Auditorium has been constructed in recent years and is located close to the downtown district. It is so arranged with large and small meeting halls that it will not be necessary for anyone to go from hotel to hotel, or other buildings, as everything will be handled in the one building.

If you have not made your reservations for this meeting, do so at once, as Oklahoma City promises a most interesting and unusual meeting. All members of state and county societies in the South are invited to attend. If you are not a member of the Southern Medical Association and would like further information about this meeting write Association headquarters, Empire Building, Birmingham, Alabama.

Dr. James McLean Rogers,

In charge of Alexander Hospital at Soon Chun, Korea, is now on furlough of a year in this country and is making headquarters at Mission Court, Richmond. Mrs. Rogers and their three children are with him.

Dr. Hugh O. Staley,

Who has been located for a time at Splashdam, is now at St. Charles.

Medical College of Virginia News.

Construction work at the Medical College of Virginia now under way, or shortly to be undertaken, will involve an expenditure of something over \$2,000,000.00.

This program includes the complete remodelling of the Egyptian Building, which will make it fireproof and preserve it indefinitely; the addition of a new story, the fourth floor, to McGuire Hall; modern morgue and autopsy facilities, and a new hospital on the northeast corner of Twelfth and Broad Streets adjoining the new clinic building. This hospital will replace Memorial and Dooley Hospitals of the Institution and about double the beds for white patients, thus relieving the present greatly crowded facilities for white patients.

Towards this building program the Public Works Administration has made a grant of \$880,623.00, the State has made appropriations, and there have been gifts from private individuals, the largest thus far being \$100,000.00.

The college has received from the estate of the late Bettie Davis Wood securities valued at slightly more than \$1,000,000.00. This will be added to the general endowment funds of the institution. This bequest will be known as the Judd B. Wood and Bettie Davis Wood Memorial, named for the late Doctor Wood, who was a dentist of Richmond, and his wife, who together provided the bequest.

Dr. W. T. Sanger, President, and Dr. William B. Porter, professor of medicine, attended the dedication of the new research laboratories of the Squibb Institute for Medical Research, New Brunswick, New Jersey.

Dr. Lee E. Sutton, Jr., dean of the school of medicine, Dr. F. J. Wampler, professor of preventive medicine, and President W. T. Sanger attended the annual meeting of the Association of American Medical Colleges held in Syracuse, New York, October 24-26.

Dr. Lewis E. Jarrett, director of college hospitals, attended the meetings of the American Hospital Association in Dallas, Texas.

News from University of Virginia, Department of Medicine.

At the meeting of the Clinch Valley Medical Society in Appalachia on September 24, Dr. J. Edwin Wood spoke on the subject of Hypertension and Its Bearing Upon Industrial Risks and Compensation Claims, and Dr. William H. Parker read a paper on Some Aspects of Hand Injuries.

At the meeting of the University of Virginia Medical Society on October 3, Dr. E. W. Kirby spoke on Experience with Prostatic Resection; Dr. Byrd Leavell presented a paper on The Clinical Course, Treatment and Prognosis of Acute Glomerulonephritis; Dr. Staige D. Blackford discussed Results From Serum and Sulfanilamide Therapy of Pneumonia; and Dr. D. C. Wilson spoke on Shock Therapy in the Treatment of the Affective Disorders.

On October 17, Dr. William H. Parker addressed the University of Virginia Medical Society on The Treatment of Appendiceal Abscess and Dr. E. W. Shearburn spoke on Thyrotoxicosis.

The Jefferson Medical College.

The 114th annual session was inaugurated September 20. Mr. Robert P. Hooper, president of the Board of Trustees, presided. The introductory lecture was delivered by Charles M. Gruber, A.M., Ph.D., M.D., professor of Pharmacology, on "Research, the Key to Progress."

Dr. Henry K. Mohler, the dean of the college, welcomed the 495 members of the student body. Of this number, 143 are new students, 133 admissions to the first-year class, and ten admissions to the third-year class.

The members of the first-year class were prepared for medical study in sixty-two different institutions; all of them have pursued and completed four years of preliminary and preparatory study and graduated from these institutions before being admitted to the medical course.

Geographically, thirty-six states, insular possessions, and foreign countries are represented, as follows; California, Connecticut, Delaware, District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Mississippi, Missouri, Montana, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Virginia, Washington, West Virginia, Puerto Rico, Hawaii, Korea, Persia, Nicaragua.

Announcement was made of the election of Mr. Horace P. Liversidge as a member of the Board of Trustees, of Dr. Bernard J. Alpers as professor of Neurology, and of Dr. Miles E. Drake as an additional member of the teaching staff in the Department of Pharmacology.

Dr. Thomas M. Talbott,

Of East Falls Church, was the recipient of congratulations and good wishes from many friends on October 17—the occasion of his ninetieth birthday. Dr. Talbott is one of our oldest members and we are pleased to note that he enjoys reasonably good health and is still able to carry on a limited office practice.

The American Association of Obstetricians, Gynecologists and Abdominal Surgeons

Held its annual meeting at White Sulphur Springs, W. Va., September 22-24, under the presidency of Dr. Paul Titus of Pittsburgh, Pa. At this time, Dr. James E. King of Buffalo succeeded to the presidency, and the following officers were elected for the ensuing year: President-elect, Dr. J. R. McCord of Atlanta; vice-president, Dr. James K. Quigley of Rochester, N. Y.; secretary, Dr. James R. Bloss of Huntington, W. Va.; treasurer, Dr. Lewis F. Smead of Toledo. The two last named officers were re-elected. It was decided to hold the 1939 meeting at Hot Springs, Va., during the week immediately preceding the American Congress of Obstetrics and Gynecology which is to be in Cleveland next September.

Dr. Frank F. Thweatt, Jr.,

An alumnus of the University of Virginia, Department of Medicine, in 1928, has been transferred from the U. S. Marine Hospital, Baltimore, and is now located at 161 Federal Office Bldg., Minneapolis, Minnesota.

Dr. S. E. Massey

Of Amonate is now in Winter Park, Florida, where he plans to spend the winter.

Dr. John A. Davis,

Who has practiced for some years at Cedar Grove, W. Va., has retired from practice and returned to Virginia. He is now located at 703 Carter Road, Roanoke.

Graduate Course in Ophthalmology and Laryngology.

The thirteenth Annual Spring Graduate Course in Ophthalmology and Laryngology will be given at the Gill Memorial Eye, Ear and Throat Hospital in Roanoke, April 3 to 8, 1939. The following will be among the guest speakers: Dr. C. Stewart Nash, Dr. Edward A. Looper, Dr. Hugh H. Young, Dr. Joseph E. J. King, Dr. Edmund B. Spaeth, Dr. Raymond E. Meek, Dr. Webb W. Weeks, Dr. Henry M. Goodyear, Dr. James A. Babbitt, Dr. Meyer Wiener, Dr. Alfred Bielschowsky.

Dr. Herbert C. Jones,

Petersburg, has been elected a member of the School Board of that city to fill a vacancy caused by the death of Mr. Wallace M. Rucker. Dr. Jones has always taken great interest in civic affairs. He is a past president of the Rotary Club and at this time a director of the Petersburg Chamber of Commerce.

Dr. B. H. Martin,

Chairman of the Board of Supervisors of Henrico County, has accepted the chairmanship of the Citizen's Road League for the County, also.

Assistant Surgeon General Warren F. Draper,

Recent chief of the Division of Personnel and Accounts, has been appointed first incumbent of the newly-created position of Executive Officer of the U. S. Public Health Service. Immediately after his graduation from Harvard Medical School in 1910, he entered the U. S. Public Health Service as Assistant Surgeon. In 1922, Dr. Draper was detailed as Assistant Surgeon General in Charge of the Division of Domestic Quarantine, which position he occupied

until 1931 when he was assigned to assist the Virginia State Department of Health in the study and investigation of health problems, acting as State Health Commissioner. He was relieved of this work in 1934 and assigned to the Washington office.

Author of many articles in connection with his health studies, Dr. Draper has been active in organizational work related to his regular duties. While serving as Assistant Surgeon General, he represented the service in the House of Delegates of the American Medical Association, with the American Public Health Association, and in advisory capacities to other national health groups.

American College of Surgeons.

At the recent meeting of the College, held in New York, the following officers were elected: President, Dr. George P. Muller, Philadelphia; and vice-presidents, Dr. Henry W. Cave, New York, and Dr. David E. Robertson, Toronto, Canada.

Seaboard Airline Railway Surgeons Association.

The 39th Annual Session of this Association was held in Richmond, October 13-15, under the presidency of Dr. Joseph D. Collins of Portsmouth, Chief Surgeon for the road. The main topic for discussion was the treatment of injuries. There was a tour of historical Richmond on the 13th, and the final day was given over to a trip to Williamsburg, Jamestown and Yorktown.

Dr. A. R. Beyer, Tampa, Fla., was elected president for the coming year, with other officers as follows: vice-presidents, Dr. J. O. McClelland, Maxton, N. C.; Dr. R. O. Lyell, Miami, Fla.; and Dr. Wilbur R. Bracey, Richmond; secretary-treasurer, Dr. J. W. Palmer, Ailey, Ga., re-elected.

Scientific Exhibit—American Medical Association.

Application blanks are now available for space in the Scientific Exhibit at the St. Louis Session of the American Medical Association, May 15-19, 1939. Attention is called to the fact that the meeting is a month earlier than usual, and applications close January 5, 1939. Blanks will be sent on request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn St., Chicago, Ill.

Dr. Richard W. Fowlkes,

Richmond, was recently elected president of the

Richmond Chapter of the Washington and Lee University alumni.

Married.

Dr. John E. Womack and Miss Page Hughes both of Staunton, October 6.

Dr. Robert Vaughan Terrell and Miss Mildred MacDonald Middleton, both of Richmond, October 8.

Dr. Bernard Lidman

Recently located in Norfolk, with offices in Wainwright Building, where he will be engaged in the practice of internal medicine. Dr. Lidman graduated from Johns Hopkins University School of Medicine in 1935, following which he spent three years in hospital service at the Sinai Hospital of Baltimore.

Dr. John B. Holt,

Class of '37, Medical College of Virginia, has been appointed and commissioned as Assistant Surgeon in the Reserve Corps for active duty at the U. S. Marine Hospital, Boston, Mass.

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Office equipment and surgical instruments. Good condition. Reason for selling—doctor deceased. Address "Equipment", care this JOURNAL, 1200 East Clay Street, Richmond. (Adv.)

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Home for Convalescences.

A home for the care and treatment of chronic aged and convalescences has been opened at Arrington,

Nelson County, Virginia, under the direction of Dr. and Mrs. Fred M. Horsley. Information upon request. (Adv.)

Obituary Record

Dr. Japheth Edward Rawls,

Prominent Suffolk surgeon and chief of staff of Lakeview Hospital in that city, died at that hospital on October 14, as the result of injuries received in an automobile accident near Waverly. He was returning from the meeting of the Seaboard Airline Railway Surgeons in Richmond, when a rear tire of his automobile blew out, causing the car to leave the road and overturn. Dr. Rawls was sixty-three years of age and graduated in medicine from the University and Bellevue Hospital Medical College in 1899. He had held many positions of honor in his community, was a trustee of Elon College in North Carolina of which he was an alumnus, and was a member of various medical organizations, including his local, State and national societies, and was a fellow of the American College of Surgeons. His wife and eight children survive him.

Dr. Wilson Reynolds Cushing,

Prominent physician of southwest Virginia, died at his home in Dublin, October 6, after a long illness. He was born at Belair, Md., eighty-one years ago. Upon completion of a college education, he taught for a short time, before entering the medical department of the University of Maryland. He received his diploma from that college in 1881, and came to Virginia, where he practiced in Montgomery County, moving to Dublin in the Fall of 1887. He continued his work there until a few years ago when forced to retire from active work because of his health. His wife died some years ago. Dr. Cushing had been an interested member of the Medical Society of Virginia since 1885.

Dr. J. L. Kent says of Dr. Cushing: "By nature intelligent, careful, gentle, and sympathetic; by diligence in study, well-equipped for the practice of his noble profession; by his faithful following of the 'Golden Rule', he became the much beloved 'family physician' of many in Pulaski and Montgomery Counties."

Dr. Ernest Coleman Levy,

Nationally prominent in public health work and

formerly director of public welfare of Richmond, died September 29 after an illness of several years. He was born in 1868 and received his degree in medicine from the Medical College of Virginia in 1890. After a couple of years of post-graduate work, Dr. Levy practiced in Richmond until 1897, at which time he accepted the position of Professor of Histology, Pathology and Bacteriology at the Medical College of Virginia. He resigned three years later to devote his time to special work in public health. In 1905, Dr. Levy was appointed to the newly created office of City Bacteriologist for Richmond, and in 1906 he was elected chief city health officer, serving in this capacity until 1917. He became director of public welfare in 1919 and held that position until 1924, following which he was for a year professor of preventive medicine at the Medical College of Virginia. For the next three years, Dr. Levy was health officer at Tampa, Fla.

Dr. Levy was a member of the Richmond Academy of Medicine and a former member of the Medical Society of Virginia. He held many offices in national organizations, among them being president of the American Public Health Association in 1923. Dr. Levy was a past commander of Richmond Post No. 1, American Legion and was a retired major in the medical corps of the U. S. Army. His wife survives him.

Dr. William A. Kearney.

Well-known physician at Prospect for the past thirty years, died October 17, in a Richmond hospital, following an operation. Dr. Kearney was eighty-three years of age and a graduate in medicine from the University of Maryland in 1883. He had been a member of the Medical Society of Virginia for a number of years. Two daughters and two sons survive him.

Dr. Edward Chambers Laird,

For many years a leading citizen and prominent physician of Boydton, died at the home of his son, T. Holt Laird, in Greensboro. N. C., on August 22, after being in feeble health for sometime. He retired from active work in Boydton in 1932, at which time he moved to North Carolina, but continued his membership in the Medical Society of Virginia. Dr. Laird was a native of Boydton and eighty-three years of age. He graduated in medicine from the University of Maryland and, after an internship at the

hospital there, practiced for a time in Baltimore before returning to Virginia. He was for sometime resident physician at Buffalo Lithia Springs, and also at Battery Park Hotel, Asheville, N. C. His widow, a son, and several grandchildren survive him.

Dr. John Webb Simmons,

For more than fifty years a general practitioner in Martinsville, died in that city on October 12, after a prolonged illness, at the age of seventy-nine. He graduated from the Medical College of Virginia in 1885, and joined the Medical Society of Virginia that year. Dr. Simmons practiced for a short time in his native county of Floyd before locating in Martinsville, where he took an active part in the professional and civic life of the place until his retirement because of bad health. He is survived by five children.

Dr. John Luther Nall,

Danville, died September 29, after an illness of two weeks with heart trouble. He was a native of Chatham County, N. C., and sixty-one years of age. Dr. Nall graduated from the former North Carolina Medical College, Charlotte, in 1905. He was a member of the Medical Society of Virginia. His wife and nine children, six of them by a former marriage, survive him.

Dr. Holland Harvey Green,

Hillsboro, died October 18 from a heart attack with which he was tricken while in a Leesburg bowling center that evening. Dr. Green was thirty-five years of age and a graduate from the George Washington University in Washington, D. C., in 1931. Upon completing an internship at Sibley Hospital that city, he moved to Loudoun County about five years ago, and was recently elected president of the Loudoun County Medical Society. His wife and a son survive him.

Resolutions on Death of Dr. Hugh McGuire.

WHEREAS, The Master has removed from our midst our beloved associate, Dr. Hugh McGuire,

BE IT RESOLVED, That in his passing the Alexandria Hospital has lost the services of a most helpful advisor, a skillful physician and consultant, and a helpful and valued friend of longstanding.

BE IT FURTHER RESOLVED, That the physicians of the Staff of the Alexandria Hospital have lost a valued friend, congenial associate and a helpful and willing leader.

BE IT FURTHER RESOLVED, That a copy of these resolutions be spread upon the minutes of the Staff, a copy pre-

sented to the family of Dr. McGuire, and that they be published in the *Alexandria Gazette*, the *VIRGINIA MEDICAL MONTHLY* and the *Journal of the American Medical Association*.

Signed:

LLEWELLYN POWELL,
JAMES A. GOOCH,
J. W. LOVE,

Committee.

Resolutions on Death of Dr. Hancock.

The following resolutions were adopted by the Norfolk County Medical Society on the death of Dr. Frank Hancock:

Dr. Frank Hancock died August 15, 1938, after an illness which had incapacitated him during the past year. He was an honored member and past president of the Norfolk County Medical Society. He was also a member of the Medical Society of Virginia, the American Medical Association and the Seaboard Medical Society.

Dr. Hancock graduated from the University College of Medicine and served as interne in St. Luke's Hospital, Richmond, and later located in Port Norfolk, where he resided for several years. He was very soon appointed Health Officer of Norfolk County, a position which he retained for some time after locating in Norfolk. During this period he made many staunch friends who remained faithful to the end.

During the World War he enlisted with the Medical Corps, and was promptly sent overseas, where he was active in service until he was honorably discharged after the war.

Frank Hancock was the son of Dr. Philip Hancock and Helen Ball Hancock of Midlothian, Virginia. His father was a surgeon in the Confederate Army. After his death, his grateful friends and patients, who had benefited by his unselfish and generous life work, erected an imposing monument to his memory. Frank Hancock inherited these noble qualities of character. Although he carried on a large and useful professional work, he will be remembered more for his unflinching kindness, particularly to those in distress. He was intensely interested in the cultural aspects of life. Reading was one of his chief pleasures.

Dr. Hancock served the Norfolk County Medical Society in many capacities, but his principal interest was in the library which he founded, and was the chairman of the Library Committee practically during the remainder of his active work. Therefore,

BE IT RESOLVED, That in the death of Dr. Hancock this Society has lost a valued member, and we as individuals a faithful friend;

RESOLVED FURTHER, That a copy of these resolutions be spread on the minutes of the Society and that a copy be sent to his family as an expression of our esteem and appreciation of him.

J. C. SLEET,
CHAS. W. DOUGHTIE,
C. J. ANDREWS, *Chairman*.

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The swaddled infant pictured at right is one of the famous works in terra cotta exquisitely modeled by the fifteenth century Italian sculptor, Andrea della Robbia. In that day infants were bandaged from birth to preserve the symmetry of their bodies, but still the gibbous spine and distorted limbs of severe rickets often made their appearance.



A bambino from the Foundling Hospital, Florence, Italy,—A. della Robbia

Glisson, writing in 1671, described an ingenious use of swaddling bands — “first crossing the Brest and coming under the Armpits, then about the Head and under the Chin and then receiving the hands by two handles, so that it is a pleasure to see the Child hanging pendulous in the Air . . . This kind of Exercise . . . helpeth to restore the crooked Bones. . . .”

STRAPPED FOR RICKETS

SWADDLING was practised down through the centuries, from Biblical times to Glisson's day, in the vain hope that it would prevent the deformities of rickets. Even in sunny Italy swaddling was a prevailing custom, recommended by that early pediatrician, Soranus of Ephesus, who discoursed on “Why the Majority of Roman Children are Distorted.”

“This is observed to happen more in the neighborhood of Rome than in other places,” he wrote. “If no one oversees the infant's movements, his limbs do in the generality of cases become twisted. . . .

Hence, when he first begins to sit he must be propped by swathings of bandages. . . .” Hundreds of years later swaddling was still prevalent in Italy, as attested by the sculptures of the della Robbias and their contemporaries. For in-

fants who were strong Glisson suggested placing “Leaden Shooes” on their feet and suspending them with swaddling bands in mid-air.

How amazed the ancients would have been to know that bones can be helped to grow straight simply by internal administration of a few drops of Oleum Percomorphum. What to them would have been 'a miracle has become a commonplace of science. Because it can be administered in drop dosage, Oleum Percomorphum is especially suitable for young

and premature infants, who are most susceptible to rickets. Its vitamins A and D derived from natural sources, this product has 100 times the potency of cod liver oil.* Important also to your patients, Oleum Percomorphum is an economical antiricketic.

Oleum Percomorphum offers not less than 60,000 U.S.P. vitamin A units and 8,500 U.S.P. vitamin D units per gram. Supplied in 10 and 50 c.c. bottles, also in boxes of 25 and 100 ten-drop soluble gelatin capsules containing not less than 13,300 vitamin A units and 1,850 vitamin D units (equal to more than 5 teaspoonfuls of cod liver oil*).

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VIRGINIA MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

Vol. 65, No. 12.
WHOLE No. 1038.

RICHMOND, VA., DECEMBER, 1938

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Virginia Medical Monthly

Official Publication of the Medical Society of Virginia

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RICHMOND, VA., DECEMBER, 1938

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THE DIAGNOSTIC VALUE OF THE CLINICAL ASPECTS OF DIGESTIVE DISEASES.*

WILLIAM J. MALLORY, M.D.,
Washington, D. C.

"I am of opinion that so far as concerns knowledge of nature, one can know nothing definite about it except from medicine; but this may be thoroughly learned when men go about it rightly."—HIPPOCRATES.

The word "clinical" is used here in its original meaning, that is, leaning or reclining, and therefore bedside; and by "aspects" is meant all that may appear to the eye and the mind of the trained physician at the bedside of the patient.

These aspects of disease are becoming more justly appreciated since the generalized use of instrumental methods of examination of the patient has begun to teach us the importance of clinical methods of diagnosis. because in so many instances all the facts elicited by technical means are inadequate to explain a situation or to construct a clinical picture, and we must then return to the history, symptoms, and physical signs for an interpretation of the problem presented by the sick person.

When we come to consider the manifestations of disease, we find that the word "symptom" has a much deeper meaning than is usually allowed. What a patient feels that is unpleasant or painful is commonly referred to as a symptom, but the word derived from sym- (together) and tom- (from toma, to fall) really means a falling together, so the word derives its significance from the when, where, and how relation to other events and experiences.

While always of great interest to the patient, symptoms may be erroneously considered either trivial or ominous; their true significance is known only to the experienced physician.

One patient is much perturbed by a "fluttering in the stomach" with "something rising up through the

chest to the back of the neck and top of the head". While another, with "pain under the breast-bone running down the left arm" is not anxious but only wants something for the "relief of neuralgia".

The doctor's interpretation is quite the opposite in values. The first is trivial; the second, portentous.

Let us consider some symptoms and their interpretation, as examples.

The child that vomits breakfast every school day, but is well and happy Saturday and Sunday, probably has no disease of the stomach, but an anxiety state. The wife who has indigestion only after those meals eaten in company with her husband is probably in similar state.

Pain in the region of the stomach may mean almost anything, but when it occurs punctually at a certain time after eating and is definitely relieved by soda or food. it begins to have much more specific significance.

A lump in the throat may be alarming to the patient, but when it is said to move up and down, and comes and goes with change in the emotional state, it is not of grave significance.

Difficult swallowing, in the absence of significant previous history or coexisting disease, when it occurs suddenly under emotional stress, is severe, and then disappears temporarily with or without treatment, is nearly always due to cardio-spasm and not to organic obstruction. This is especially true of those cases having equal difficulty with liquids and solids, and is to be managed by non-irritating food, sedatives and anti-spasmodics.

If, in passing the Ewald stomach tube, obstruction is encountered at the distance of forty-two centimeters or sixteen inches from the incisor teeth, this obstruction may be due either to spasm, in which

*From the Department of Medicine, George Washington University School of Medicine.

Read by invitation at the sixty-ninth annual session of the Medical Society of Virginia, at Danville, Va., October 4-6, 1938.

case it would be intermittent, or to an organic lesion, in which case it would be constant. When obstruction is encountered higher up in the esophagus, it is most certainly organic in nature.

Very rarely I have seen cases of dysphagia in which X-ray examination showed no evidence of pathology, whereas a month later definite evidence of carcinoma was found by the same roentgenologist. There is one report in the literature of an instance in which diagnosis of carcinoma of the lower end of the esophagus was made after examination by the X-ray and esophagoscope, and X-ray therapy used; but about eighteen months after the beginning of symptoms, an obstructing mass of persimmon skins was removed, with complete relief. Carcinoma was not present.

Many years ago, Paul Cohnheim taught that digestive disturbance with a multiplicity of varying symptoms and no pain was functional in character, whereas pain indicated organic disease.

Unqualified statements are dangerous, especially concerning medical conditions, but Cohnheim's generalization is usually correct.

One grave exception should be noted: If an adult person, previously free from digestive disturbances, while "eating everything" as the saying is, develops any digestive disturbance without clear evidence of provocation, cancer should be thought of; and another safe generalization is, cancer of the stomach cannot be recognized in time to benefit the patient by any other means than X-ray examination.

Cancer may be found on gastroscopic examination, it is true, but X-ray examination is more available.

One serious condition of the stomach can be readily recognized without laboratory aid, that is, pyloric stenosis. When a patient repeatedly vomits recognizable food, identified as that eaten twelve or more hours previously, organic pyloric obstruction from some cause is present.

Or, finding of food, for example, rice and raisins, in the stomach, by aspiration with the ordinary Ewald stomach tube twelve hours after the food was ingested, is a sure sign of pyloric obstruction.

Visible peristaltic waves passing across the epigastrium from left to right have almost the same meaning, and only a good surgeon can cure or relieve the condition, depending upon the underlying cause, that is, whether simple stricture or cancer be found.

So-called heartburn is at times a very deceptive

symptom. Commonly, this is supposed to be due to excess of hydrochloric acid in the stomach, but burning is sometimes absent when acid is present and present in complete achlorhydria.

We therefore have the paradoxical state of affairs, in which a little dilute hydrochloric acid after meals may sometimes relieve heartburn, when alkalis prove to be useless.

The well known syndrome of duodenal ulcer, namely, discomfort, pain, burning and even vomiting, recurring punctually at a given time after food, and definitely relieved, temporarily, by food, soda or vomiting, is only too easily recognized. I say, too easily recognized, because these symptoms, even though occurring in significant sequence, do not infallibly mean duodenal ulcer, as is often erroneously supposed.

The reason for this is that one essential factor in the production of this syndrome is spasm of the pylorus, and the latter may be and often is, produced by conditions other than ulcer.

When such a group of symptoms is present, even with some presumptive laboratory findings, and are not markedly relieved by six daily feedings of a bland diet, with the use of anti-spasmodics and antacids, then either ulcer is not present, or, if present, is complicated by some other condition such as adhesions, pyloric stenosis, chronic appendicitis or gall bladder disease.

If gall bladder disease is present, repeated careful inquiry will reveal that on some occasions the pain was prolonged for hours, or was not relieved by soda or vomiting.

One type of chronic recurrent digestive disturbance is best described under the classification of gastric atony or motor disturbance of the first degree of Boas.

The symptoms are commonly every variety of misery except pain. They are usually misinterpreted and the treatment is therefore often a failure.

The patients cannot eat a big meal because they "fill up too quickly". "Appetite is lost while still eating." "There is a lump, weight or knot in the stomach." "Food is too heavy." "Gas forms", and they can't "bring it up." Everything disagrees, more especially the liquid, soft, mushy diet and milk that has been resorted to because the stomach was "weak".

It is noticeable that there are days of freedom from symptoms when all is well without change of diet, and then recurrences of distressing discomfort, asso-

ciated with worry, frustration and depressing circumstances.

On physical examination these patients are found to present the physical habitus and figure seen in the Botticelli type of art. They are asthenic, enteroptotic, undernourished, hyperesthetic, ambitious beyond their physical resources. There is a long thorax, sunken epigastrium, prominent lower abdomen, carrying posture, in other words, the typical "debutante slouch". A splashing sound is elicited in the epigastrium. There is a narrow costal angle, and frequently a floating tenth rib and movable kidney.

These patients will never be cured by removing Lane's kink, Jackson's membrane, or the gall bladder, shortening the uterine ligament, amputation of the vermiform, or any other appendage.

Women having this type of indigestion are well while pregnant, but advice in that direction, although "one of Nature's remedies", is a counsel of perfection which the doctor hesitates to give, and the patient may refuse to accept as being not only a major operation but one that may require repetition.

Thrown back upon artificial means, most benefit will be derived from a solid, concentrated, tasty fattening diet, an abdominal support, with more rest and recreation. Relief from some household care, such as even a part-time maid may give, or relief from the care, worry and frustration associated with a hopelessly ill or childish senile old person in the family.

Malfunction of the colon is a most common cause of digestive disturbance, and since the symptoms are usually manifested in the region of the stomach, instead of the lower abdomen, they are misinterpreted, and again treatment is a failure.

This will be understood when it is recalled that experimentally and clinically it has been shown that mechanical or chemical irritation of the sigmoid will produce disorder of the motor function of the stomach, more especially pylorospasm.

The symptoms and signs which should warn us that we are dealing with this combination of relations are—soreness across the abdomen on rising in the morning, irregular bowel action, especially alternation of constipation and diarrhoea, irritative action of laxatives, as shown by their action being either none or too much, and the passage of scybalous masses often with mucus. A palpable tender sigmoid is usually found.

If, in addition to these symptoms and signs, the pa-

tient has been using bran for the relief of constipation, as is so frequently the case, and eating freely of raw vegetables, nuts and salads, a favorable prognosis may be given. The treatment is—a strict bland, smooth diet with any one of the gelatinous emollient bulk-producing substances, with full doses of sedatives and anti-spasmodics.

These will bring relief, never experienced from the so-called digestants or diets directed to the gastric function.

I have seen such cases diagnosed as peptic ulcer, on account of the pylorospasm, and so treated for a considerable time in vain, to be ultimately relieved by measures directed to the colon.

Then, there is a type of intestinal indigestion, first placed in the nosology of disease by Schmidt of Halle, nearly thirty years ago, but which still frequently escapes recognition. The name of the condition is "Intestinal Fermentative Dyspepsia."

It is characterized by an afebrile diarrhoea, chronic recurrent abdominal discomfort, gas, distention, bloating, and general malaise. Roentgenological examinations give only negative information and elaborate search for specific infections, intestinal parasites, leave the clinician in the dark. While the right kind of laboratory examination will confirm the diagnosis, the disease can be definitely recognized by a careful gross examination of the excreta, which would show the following characteristics: voluminous, mushy in consistency, but not watery; frothy, containing fine gas bubbles and obviously fermented; sour in odor and acid to litmus paper. This appearance and condition is due to undigested starch and consequent fermentation in the lower bowel.

A therapeutic test and relief may be provided by a certain diet, high in protein, free from potatoes, legumes, green corn and coarse uncooked cellulose. Starch digestants in large doses are of additional benefit.

Having said so much about the vague chronic, recurrent digestive disturbances, which, while annoying and distressing to the patient, even producing some inefficiency for work, still are not dramatic in manifestation or dangerous in their consequences, it is now in order to amend this by some discussion of acute conditions.

One serious acute condition, which is increasing in frequency, is the so-called "food poisoning". This is our old acquaintance, "ptomaine poisoning" but, of course, it is now known that it is not ptomaine

poisoning—that is, the decomposition products of protein food, but food that has become contaminated with pathogenic bacteria.

The increase in frequency is undoubtedly due to the quantity production of ready-prepared foods, such as sandwiches and salads and their storage in advance for crowd consumption.

Under these conditions a slight contamination with bacteria at the time of preparation, and their subsequent growth may result in the poisoning and infection of a large group of people, unless the food is stored under conditions which inhibit the growth of bacteria.

This condition must be recognized and treated before a scientific bacteriological diagnosis can possibly be made. A person, or more frequently, a group of persons, previously in ordinary good health, are suddenly seized with the symptoms of severe abdominal pain, nausea, vomiting, diarrhoea and collapse. This is especially apt to occur after group excursions, picnic parties and luncheons. Unless the treatment is prompt, even death may occur as a result of dehydration, liver and kidney damage.

The treatment is—elimination, if this is not already complete; control of exhausting diarrhoea and vomiting by morphia and belladonna hypodermically; and the administration of normal saline solution with or without dextrose intravenously. If such treatment is not available immediately, copious drafts of hot tea is the next best remedy.

Another acute condition is the manifestations of the so-called “acute surgical abdomen”, meaning by this term, symptoms of an acute condition in the abdomen, requiring immediate surgical treatment. This is apt to produce panic in the physician and cause him to lose clinical perspective and cloud his diagnostic acumen.

This is not strange because statistics show that in one metropolitan city 20 per cent of the cases of appendicitis had already ruptured when operated upon, and furthermore, the mortality in this group was 20 per cent; while in the unruptured group, the mortality was *nil*. This would make it seem safe and reasonable to operate upon every man, woman and child having a pain in the lower right quadrant of the abdomen.

But when the urological surgeon reports that more than 20 per cent of the patients having surgical disease of the right kidney have had the appendix removed in vain for the relief of symptoms, the

harassed family doctor is “given to think furiously”.

Now, clear thinking is difficult at all times, but it is especially so in the presence of an alarming emergency. However, previous mental exercise is as useful for valid decision and sound judgment as is physical culture for adept muscular action.

Experience with both the assumed and the really acute abdomen points to certain pitfalls and repeated errors. To be reminded of these is to be forewarned to a certain extent for the acute emergency.

Some of these old acquaintances will now be introduced. We have all met them before, but do not always readily recognize them, for they often appear in disguise, and masquerade, as it were.

The following group I have encountered in my own personal experience, and also find that they are repeatedly mentioned in the literature of clinical medicine as examples of occasional humiliating errors in diagnosis.

It is convenient to divide these into three groups:

1. Intra-thoracic conditions, sometimes given symptoms of acute surgical disease of the abdomen.
 - Pneumonia, especially the right apex.
 - Acute pericarditis.
 - Certain mediastinal diseases.
 - Coronary occlusion.
 - Angina pectoris.
 - Rupture of the heart, first stage.
 - Pneumo-thorax, acute, spontaneous.
 - Aneurism, with slow leakage into the mediastinum.
 - Intra-abdominal conditions, giving symptoms of acute surgical disease, but not requiring surgical treatment.
 - Pyelitis.
 - Nephrolithiasis.
 - Dietl's crises.
 - Acute disease of the adrenal gland.
 - Intestinal parasites; round worms and amoebic dysentery.
 - Mucous colitis.
 - Acute diverticulitis of the colon.
3. Miscellaneous conditions:
 - Meningitis in the early stage.
 - Encephalitis in the early stage.
 - The crises of tabes dorsalis and of sickle-cell anemia.
 - Typhoid fever.
 - Typhus fever.

Referred pain from spinal disease.
Tonsillitis.
Herpes zoster.
Lead colic.
Acidosis of diabetes mellitus.

When confronted by a case of suspected acute intra-abdominal pathology, requiring surgery, it will be helpful simply to recall to mind the above conditions.

Often a given disease is not recognized and diagnosed simply because it is not thought of—it simply does not enter the mind. When once the clinical picture is recalled and the patient re-examined with this in mind, the features will be recognized and the diagnosis established.

In preparation for such emergencies, one might bear in mind the following general principles:

1. Acquire the best possible acquaintance with the classic descriptions of diseases. We cannot recognize, that is, re-know a thing until we have once known it.

2. In the presence of an assumed emergency, take steps to meet the possible major requirement. Call the surgeon at once, in order that he may have the advantage of observing the progressive development of symptoms, even if immediate operation is not clearly indicated.

3. During the few hours which seem inevitably to intervene between the consultation and the operation,

let the physician re-study the case from the following points of approach:

- (a) Previous history. This source of significant information is often entirely ignored, simply because the present complaint is acute. A knowledge of previous illness, operations, or attacks may cast revealing light on the present illness.

- (b) Review again the circumstances of the present attack, until the antecedents and orderly sequence of the symptoms are clearly established in mind.

- (c) Re-examine the patient in the light of any new data and, above all, do not limit the examination to one domain. Obvious facts which appear to solve the problem may present only one aspect of the case. Other possible, though less probable, relations should be considered and investigated.

- (d) A few hours of quiet seclusion of the patient at rest in bed in the hospital under close intelligent observation will sometimes suffice for the subsidence of symptoms, or the development of signs which will enable the physician to place the case in the appropriate category, and result in rational, effective treatment.

"Life is short and the (healing) art is long; the opportunity (to administer remedies) fleeting; experiment is dangerous, the decision difficult.

"One must not only do the right thing one's self but make the patient and all about him concur.

"You must not only do the proper thing, but do it at the right time."—HIPPOCRATES.

1720 Connecticut Avenue, Northwest.

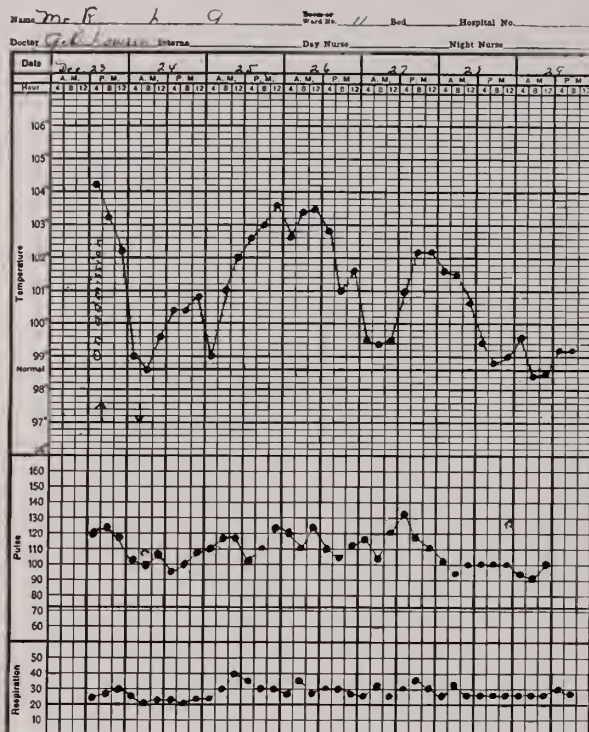
GRAPHIC EVIDENCE OF RESPONSE WITH SULFANILAMIDE IN PNEUMONIA AND PNEUMOCOCCAL INFECTIONS.

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The following are brief histories with admission physical and laboratory findings, on seven desperately-ill patients suffering with pneumonia or other pneumococcal infection, who were treated with sulfanilamide in the manner indicated. With them we present graphic records of their clinical course to aid in collective visualization of their therapeutic response following administration of the drug. Administration of the drug is indicated on the charts by

upward pointing arrows, discontinuance by downward pointing arrows, while change in dosage is indicated by downward pointing arrows with dotted lines.

Case I.—Mr. R. L. A. was admitted to the Jefferson Hospital on December 23, 1937. The patient was a thirty-year-old male with the history that three days previously he began to have weakness, malaise and progressive fever; with onset of cough and pain



and back, and then elevated temperature for three days prior to admission. Two days prior to admission she developed chills, high fever, and a dry hacking cough with only slight expectoration.

Physical Examination: The patient looked restless and toxic with rapid, shallow respirations, hot dry skin and mucous membranes. The lungs were clear to percussion and auscultation except for some harshness at the right base. By the next day there was much moisture at the right base. The patient had practically no sputum.

Laboratory Findings: Blood—hemoglobin 86 per cent, RBC 4,480,000, WBC 15,900 with 86 per cent polymorphonuclears. Urine—albumin two plus, pus three plus, and blood two plus.

Therapy: Sulfanilamide grains fifty was given shortly after admission followed by grains ten q. four hours for forty-eight hours.

Case III.—Master R. A. was admitted on December 30, 1937. The patient was a nine-year-old boy whose illness began on Christmas Day with headache, weakness and fatigue. He felt feverish and ran a temperature of 100 to 103 for the next three days. On the day prior to admission the temperature rose to 104 and he began to have pain in his right chest.

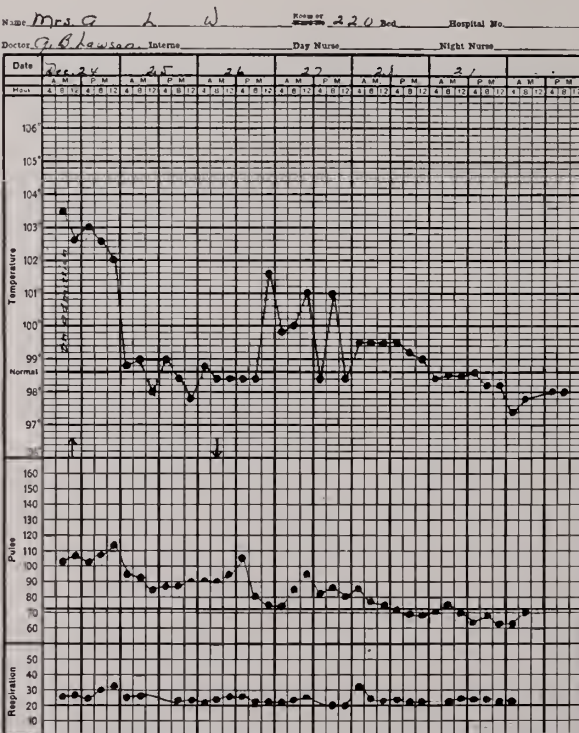
in the chest one day prior to admission. At the same time he began to have blood-tinged sputum.

Physical examination: We found a heavy-set male with flushed face, herpes of upper lip and grunting respirations. The percussion note over his chest was normal except for dullness at the inferior right scapular angle. Everywhere the breath sounds were high pitched and wheezing with a few musical rales. There were numerous fine, moist, bubbling rales at the right base. The patient looked extremely ill.

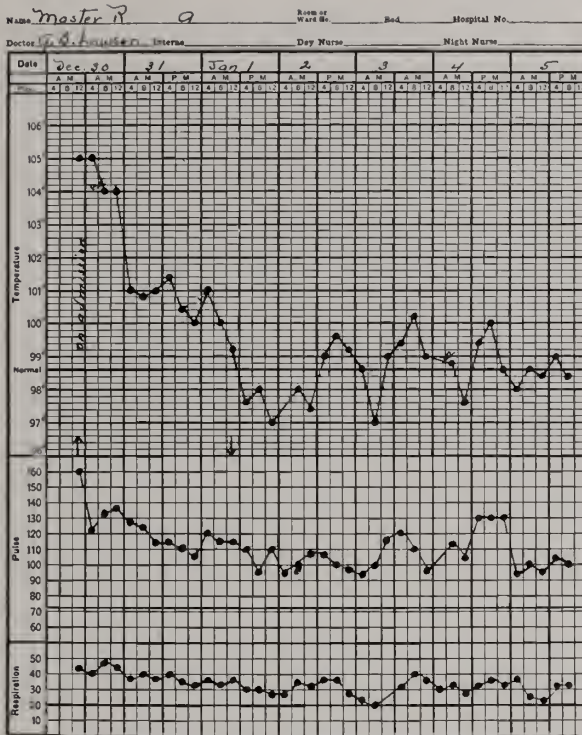
Laboratory Findings: Sputum—showed an occasional gram positive encapsulated diplococcus which failed to type.* By the next day, the sputum was positive to types two and three pneumococcus.* Blood agar plates showed mixed infection of both hemolytic and viridans colonies. Blood—hemoglobin 92 per cent. Urine—albumin one plus; pus, trace.

Therapy: Sulfanilamide grains fifty was given shortly after admission and followed every four hours by grains ten.

Case II.—Mrs. A. L. W. was admitted on December 24, 1937, a fifty-three-year-old white female whose present illness was preceded by two weeks of weakness followed by aching pains in the shoulders



*Neufeld reaction of pneumococcus types 1, 2, 3, 5, 7 and 8.



Physical Examination: The patient looked very ill with flushed cheeks, sunken dull eyes, parched lips and rapid, shallow respirations with grunting expiratory note. There was an occasional cough with blood tinged pink sputum. His chest lagged on the right where there was a questionable friction rub in the mid-axillary region. The percussion note in the right infrascapular region was flat and high pitched tubular breath sounds prevailed there. Over the right base there were numerous coarse moist rales extending up into the region of the middle lobe.

Laboratory Findings: Sputum—showed encapsulated gram positive diplococci, gram negative diplococci, and gram negative bacilli. A few of the encapsulated organisms proved to be type one pneumococcus, but the majority of them failed to type.* Urine—albumin plus two. Blood—WBC 13,450, 75 per cent polymorphonuclears.

Therapy: Sulfanilamide grains thirty given shortly after admission was vomited partly, followed by fifteen grains per rectum, and thereafter grains five q. four hours.

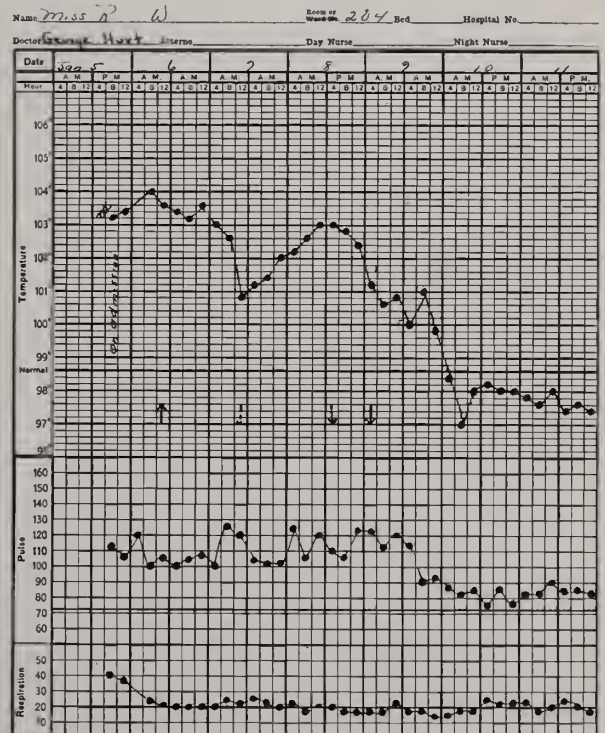
Case IV.—Miss R. W. was admitted on January 5, 1938. She was a forty-one-year-old white female whose history revealed that she had been nursing

both of her parents who died from pneumonia. Thereafter and five days prior to admission she began to have aches and pains, chilly sensations and a "chest cold". About thirty-six hours prior to admission she began to vomit and had retained nothing since. The evening prior to admission she developed a severe headache and chills, followed by increase of pain in her chest, more frequent cough and a little sputum, which on the day of admission became blood tinged. (Two days later this patient's sister developed pneumonia of which she died. Of the four, Miss R. W. was the only one who had sulfanilamide and the only one who recovered.)

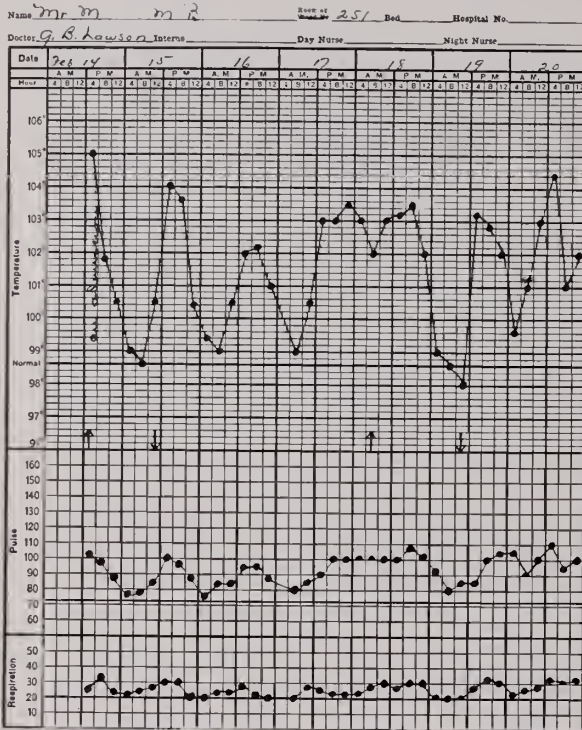
Physical Examination: The patient appeared extremely ill and mildly jaundiced. Her chest showed tubular breath sounds at the left base anteriorly with a pronounced friction rub. Later signs of pneumonia appeared in the right base.

Laboratory Findings: Cultures from the throat showed gram positive and gram negative bacilli, gram negative staphylococci and gram positive and negative diplococci, viridans predominating. Blood—hemoglobin 84 per cent, RBC 4,270,000, WBC 19,600, with 97 per cent polymorphonuclears. Urine—albumin three plus, blood trace.

Therapy: Sulfanilamide was given in initial dose



*Neufeld reaction of pneumococcus types 1, 2, 3, 5, 7 and 8.



of grains fifty and grains ten q. three hours for twenty-four hours, grains ten q. four hours thereafter until reduced to grains five as indicated on the chart.

Case V.—Mr. M. M. B. was admitted on February 14, 1938. He was a thirty-eight-year-old white male whose present illness began with signs of "flu" four days prior to admission, onset marked with a chill and followed with a temperature varying between 101 and 104. The elevated temperature persisted, chills recurred followed by nausea and vomiting. There was a moderate cough with little sputum. The day prior to admission he spit up some blood two or three times. He had practically no chest pain.

Physical Examination: The patient looked quite ill. There was normal breathing without pain except on deep inspiration when there was a little pain in the lower left chest. His face was flushed, eyes bright, and he showed a little jaundice. There was moderate dullness at the inferior angle of the right scapula. Breath sounds were rather distant at both bases, markedly tubular in character at the right base. At the inferior angle of the left scapula they were intense and tubular in character. There were a few moist crackles at the right inferior scapular angle.

Laboratory Findings: Sputum showed gram nega-

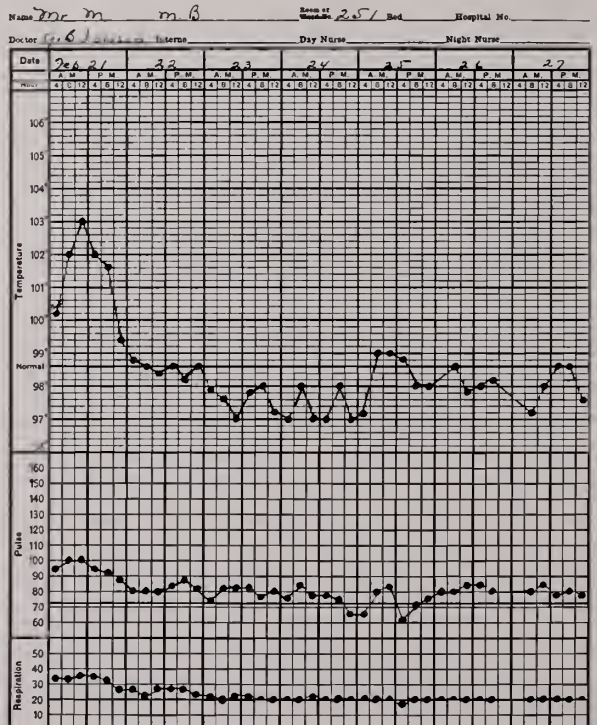
tive diplococci, gram negative bacilli and many gram positive encapsulated diplococci, which failed to type.* Urine—albumen plus two, pus trace, casts, plus two. Blood—hemoglobin 97 per cent, RBC 4,860,00, WBC 12,700, with 91 per cent polymorphonuclears.

Therapy: Sulfanilamide grains forty was given on admission followed by grains ten q. four hours as indicated.

Case VI.—Miss E. A. A. was admitted on February 22, 1938. Four days prior to admission this seven-year-old white girl complained of a little head cold and sore throat. Two days later she began to complain of abdominal discomfort, followed by nausea the next day and pain in the stomach which became acute on the day of admission and localized in the lower abdomen. The nausea persisted and vomiting supervened.

Physical Examination: The patient looked acutely ill. Breathing was rapid. Her cheeks were flushed, with marked circumoral pallor. Beads of perspiration stood out about the lips, nose and forehead. Her chest was clear to percussion and auscultation, no rales. Her abdomen was flat and without palpable masses. Marked tenderness was present

*Neufeld reaction of pneumococcus types 1, 2, 3, 5, 7 and 8.



We would like to add that in several instances the clinical appearance of the patient was much more markedly improved than the graphic record indicates, despite secondary temperature rise following discontinuance of the drug.

It will be noted that these secondary temperature rises occurred primarily in those cases which received only short or interrupted courses of the drug. Since none of these patients died and post-mortem studies therefore were not possible, one can only speculate as to the probable significance of this phenomenon. However, we would like to call attention to the experimental studies of Cooper and Gross in which many of the rats died in one of their series "probably due to premature termination of the treatment on the fourth day. Many of the rats that died after this time showed pneumonias which appeared to be no older than forty-eight to seventy-two hours."¹ We believe that the probability is that these secondary temperature rises represent clinical evidence of the same type of development in our patients, but that they fortunately were able to withstand this new assault.

The question of the justification for making a therapeutic trial of sulfanilamide in these cases may be raised. All were extremely ill and needed the benefit of any help available; and there is much evidence seeming to indicate that the drug might be helpful.

Experimentally the work of R. R. Mellon and his co-workers has shown the efficacy of the drug in type II pneumococcal pneumonia in rats,¹ type I pneumococcal infection in rats,² and type III pneumococcal pneumonia in rats.^{3, 4} In addition the same author and his co-workers have reported the successful use of the drug in type III pneumococcus pneumonia in human beings.⁵ Finally, every practitioner is now familiar with its use in hemolytic streptococcal infections.

No other form of specific (?) therapy was employed. One patient received oxygen, one received several transfusions; all received necessary fluids, sedatives, laxatives, etc. No specific antiserum was employed.

SUMMARY

The graphic records of the clinical courses of seven cases desperately ill with pneumonia or other pneumococcal infections have been presented.

Sulfanilamide was the only specific (?) type of therapy employed.

Most of the cases suffered from mixed infections not really suited to specific antiserum therapy.

All made dramatic response to therapy both clinically and graphically and all ultimately recovered.

Secondary temperature rises succeeding discontinuance of the drug were noted in several instances, (particularly in those who had short course of the drug) but clinical relapse was not nearly as manifest.

CONCLUSIONS

We realize that seven cases does not constitute a sufficient series from which to draw conclusions but we do feel that the uniformly dramatic response to the administration of the sulfanilamide in these cases is highly suggestive of beneficent and probably specific action on many of the causative organisms.

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SOME PROBLEMS IN FRACTURE TREATMENT.

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Although the American public is gradually increasing his sense of medical mindedness through various agents—the doctor himself, the press and the motion pictures—still he continues to have a hard time digesting the various bits of medical information which have come to him through these agencies, and, as an example, he continues to ask: "Doctor, did my friend have a fracture or a break?" If you told him that he didn't get a "break" but had a fracture, it would in no way stimulate his sense of humor. I am sure that if any of us should resort to humor on such a serious occasion, we would deserve that lack of appreciation.

When an accident occurs on a highway we must expect ordinarily a similar lack of understanding. We frequently see people who are badly injured in accidents, gotten up on their feet, or bundled into a knot, piled into a car, and driven miles to a doctor or hospital in a critical condition—perhaps a broken back, or limbs, or a concussion or skull fracture, or in shock. A little care might have saved a life or prevented a long convalescence.

It is not up to the Red Cross or the Boy Scouts to make people medically minded of the proper care of the injured, but it is up to you and me, the physicians and surgeons. It is we, who are handicapped in our efforts to save a life or a limb when the treatment has not been what it should at the beginning.

I have witnessed a few accidents shortly after their occurrence and have been astounded at the various bits of advice which have been volunteered from the crowds which always gather on such occasions from somewhere in no time. If some of the advice had been taken, there is no telling how many weeks of suffering, infection, and danger might have been added to an already serious condition.

There are a few fundamental principles of first aid in injuries which would be well for us to review:

First: If the victim of an accident is conscious, ask him where he is hurt and try to determine the extent of his injury with the least amount of disturb-

ance. Only if the injury occurs in an upper extremity can he be made ambulatory—not otherwise.

Second: If he is unconscious, keep him in a recumbent position and examine him carefully for injuries to his spine and extremities, cutting away his clothing wherever a closer examination seems necessary.

Third: Splint all extremities where fracture is even suspected, taking care to immobilize above and below the associated joints. Where fracture of the spine is suspected, determine at once whether any paralysis exists, as this information may be an important guide to the decision of the surgeon later as to the value of laminectomy. Transport all suspects of spine injury on their stomachs, or on improvised stretchers on their backs, as flexion may cause further damage to the cord. Forearms and legs can usually be supported by improvised splints, but the humerus can best be protected by binding it against the side of the body. "Splint 'em where they lie" is an old army phrase. If there is a deformity which prevents adequate splinting, correct it by gentle but firm traction.

Fourth: Treat shock. This is best done by stopping obvious hemorrhage, administering morphine to stop pain, wrapping carefully in warm blankets, and splinting the injured limb. Do not move the patient until the splint is applied. Do not give stimulants, as they tend to raise blood pressure and increase hemorrhage.

Fifth: In case of compound wounds, do not attempt to do a debridement at the place of the accident—merely apply sterile dressings to prevent further contamination and get them to a hospital or your office as quickly as possible. When there, do not apply strong chemical antiseptics, but first wash out carefully with an abundance of sterile salt solution, picking out loose particles and flushing out the depths of the wound. Then remove with scissors, or knife and forceps, the entire surface of the wound and skin edges, washing again with salt solution.

Suture all nerves and tendons, and reduce open fractures. If not properly done at this time, it becomes a tedious or impossible task later through scar tissue. The wound, if it is reasonably clean, may then be closed with or without drainage as the estimated chance of infection may indicate. When there is no increased temperature or enlarged and painful glands or other evidence of infection at the end of forty-eight hours, the drains, if used, may be removed. Tetanus antitoxin should be used in all compound fractures, and gas bacillus antitoxin should be used in all road accidents as well as those occurring around farms. The possible reaction from this about the third to sixth day may have to be differentiated from infection in the wound, but if the wound is clean, an attitude of watchful waiting should be assumed.

Sixth: Transport the patient to your office or the hospital with extreme care to avoid any unnecessary jarring, and keep him in the horizontal position. If there is shock, keep his feet raised.

After going into this much detail in regard to first aid measures in fractures, I would like to hit a few high spots as to the pitfalls of certain specific fractures:

Colles' Fractures: Be sure in the reduction that three fundamental requirements are fulfilled:

First: Full restoration of length in the radius.

Second: Full restoration of the downward facing of the joint surface.

Third: Full restoration of the normal posterior position of the ulna in the radio-ulnar articulation.

Position is best maintained in a circular cast if you are positive of having your patient under observation. Moulded plaster splints are next best.

Fractures of the Forearm: This is the only place in the body where perfect preservation of the interosseous space is absolutely essential to normal motion and function. If the radius can be locked end to end in good alignment in fractures of both bones in the lower third, and the interosseous space preserved by the use of rolled interosseous felt pads, then the position of the ulna is not of very great importance to function. The reverse is true in the upper one-third of the forearm, but in the middle one-third the radius and ulna are of great importance. Be sure to maintain immobilization until actual bony union is demonstrated by X-ray.

Supracondylar Fractures of the Humerus: These

are difficult to reduce because the proximal or upper fragment cannot be controlled. In our clinic we have come to call them the "tea-cup" fractures, because reducing them is like trying to set the rims of two tea-cups on each other. If the apposition is not perfect they will form a see-saw, and we may have either a loss or an increase in the carrying angle, and, since these fractures occur almost entirely in young children, there may be a disturbance of growth of one side of the epiphysis. It is wise to mention this in your prognosis to the parents. Due to the extensive swelling which often takes place about the elbow in supracondylar fractures, it is very important that they be observed frequently for at least forty-eight hours. It may be necessary to lessen the amount of flexion.

There are several fractures which are empirically treated by open reduction: First—fracture of the head of the radius. However, in children every attempt should be made to reduce the fragments perfectly, but in adults the fractured head and its fragments should be removed. Fractures of the olecranon with displacement should be sutured with wire, chromic catgut, or sutures of fascia lata.

Open reduction must not be considered lightly. The ordinary technique of abdominal surgery is not good enough for bone surgery and would lead to many calamities. Open reduction should never be considered short of four to seven days after the injury, as the tissues traumatized by local damage must have time to develop resistance against infection.

The same is true of fractures of the patella. It must be remembered here, that, in addition to the bone separation and tissue damage, the capsule of the joint is torn—often down as far as the lateral ligaments—and that the suture of this is as important to restoration of function as the suture of the bone itself. It may, in many cases, be conservative to remove the fragmented lower pole and suture the patella tendon to the upper fragment. By this procedure the convalescent time is much shortened, and the end results seem equally as good or better.

Many of us are beginning to feel that open reduction of fractures of the neck of the femur with fixation by means of the Smith-Peterson nail, or one of its modifications, offers the best chance for union. It must be remembered, however, that success, even by this method, cannot be expected in more than 75 per cent of the cases because of disturbances in the

circulation as a result of the fracture. We must recall that the circulation through the ligamentum teres is practically nil, and if the fracture occurs very close to the head, the major part of the blood supply through the nutrient arteries of the neck is destroyed. One can readily see that even though the fracture might heal, aseptic necrosis of the head may take place after healing, and the end result might be poor.

In all fractures where a joint is involved in the fracture line, a guarded prognosis should be given.

X-ray technique is improving continually as greater demand for an accurate interpretation is being made. A fracture of the spine might easily be missed without a lateral view. Lateral views are also being made of fractures of the hip and fractures of the shoulder. An accurate visualization of fractures of the os calcis cannot be made without an angle view taken through it posteriorly. We are reaching a state where much more attention is being paid to the pre-reduction interpretation of the displacement might be obtained by the fluoroscope during the actual reduction of the fracture, and our results are more of the fracture than to the information which better.

The easiest time to reduce a fracture is within an hour or two of its occurrence. At that time one is not handicapped by swelling and distortion of the landmarks. In addition, nature has a marvelous way of creating its own anæsthesia immediately after a severe injury, and muscle spasm frequently does not begin for some time. It is possible to accomplish a reduction of many fractures without anæsthesia during these moments without appreciable discomfort to the patient.

In these advanced days when people have become X-ray minded, it is important that frequent examinations be made to assure yourself and to protect your patient from changes which may have taken place in the position of the fracture fragments. This is especially important during the early stages of healing before a sufficient amount of solid callus has formed to prevent such displacement. When the doctor is taking on the responsibility of a fracture, he may also be taking on the possibility of a law suit, and his case records and the X-ray proof of the course which he has followed, as well as the logic of his reasoning, must be at all times in the proper condition for inspection. The same is true in dislocations as well as fractures. I know of a law suit recently, which hinged entirely upon the fact

that the attending physician had no record of his accomplished reduction. Two months later the joint was out of place. Even though the patient had not been cooperative there was no evidence produced except the doctor's word that reduction had ever been accomplished.

It would be impossible in a short time to go into even a brief discussion of the problems met with in all the various fractures, and I will conclude with bringing to your attention a certain confusing condition which arises in the extremities after injury. This condition was described first by Sudek, a German writer, in 1900, as post-traumatic acute bone atrophy. The patient has a minor accident, not even necessarily accompanied by fracture. Within a week or two the hand or foot or injured area suddenly becomes swollen and extremely painful. The skin is glazed, and there is a dusky red discoloration. The capillaries are engorged although the pulse may be readily felt. The joints become stiff, and frequently there is excruciating pain on both active and passive motion. There is frequently a subluxation, especially in the bones of the foot when weight bearing is attempted. The actual cause of this condition is probably a congestive hyperemia, but unquestionably the early use of the extremity in a unprotected state seems to be an important factor in its development. I am sure that you have all seen such cases. Their picture is a very striking one. Frequently the pain which is complained of is out of all proportion to the findings, and the patient seems to suffer both day and night, both when active and when resting. The pain is usually not relieved by mild forms of sedatives. Although the swelling and discoloration will disappear when the limb is elevated, it takes several hours to make much impression. Many of these patients are classified as malingerers, and the majority of them are mistreated. Unfortunately their recovery is extremely slow, taking often as much as six months or longer. The treatment consists in the prevention and avoidance of all painful motions. It may be necessary to use plaster casts, extending to the end of the extremity, for certain periods of time. Following this, physiotherapy is of great value, especially diathermy and warm saline soaks or packs. When these physiotherapy measures are not obtainable, hot baking and packs several times daily at home may be substituted. It is important that the psychological attitude of these patients who have suffered to the extent of their tolerance also be taken

into consideration. Do not, by any means, allow yourself to get impatient with them. They should be encouraged, and advised as to the expectations for recovery.

In summarizing, I will state a few high-lights in the treatment of fractures:

Treat the shock, stop the hemorrhage, splint the fracture and transport to a hospital.

Treat the wound and reduce the fracture after recovery from shock.

Study the muscles and the direction in which they pull.

Bring the fragment which *can* be controlled into alignment and rotation with the fragment which *cannot* be controlled.

Check frequently with X-ray.

Watch fixation apparatus constantly, and allow no painful points of pressure in any splint or cast.

HYSTERIA.*

THOS. N. SPESSARD, M.D.,
Norfolk, Virginia.

This condition, first described by Aristotle and derived from the Greek word meaning from the womb, is unfortunately not as simple as visualized by this Greek philosopher. Instead of being a disease of women as emphasized by this patriarch, it is common to both sexes, at all ages, at every economic level and in any mental capacity. No condition is more frequently encountered, and no disease, not even syphilis, can so closely simulate other conditions.

Since the advent of Freud's attractive, somewhat elusive, but withal comforting Hypothesis as to the etiology of the neuroses, a great vista of speculation by publicity, books, periodicals, and even much real poorly disguised quackery has made the general public more or less neurotic conscious. This super-enthusiasm so prevalent around us has not only affected our adult population, but through the numerous parents' guidance magazines is no doubt affecting to some degree the lives of our children. Almost any mother, today, has at hand abundant knowledge as to various methods of correcting misbehavior, child self-expression, sex education, feeding difficulties, and practically every phase of the child's emotional and physical existence. This is not written as a criticism of this condition. Whether the lives of our children, today, are fuller, happier, and less complicated than those of children in the past is a matter of opinion, but that this widespread, often misdirected, and at times actually dangerous publicity given to the general public today is producing an increasing number of neurotics is, in my opinion, too apparent.

We, as doctors, even as the laymen, at times have our temptations to follow will-o'-the-wisps and unproven paths, and the impulse to diagnose first and examine later is almost overwhelming. Whatever our line of work, we have a tendency on occasion to overlook the fundamentals, and it is with this in mind that I desire to present some of the basic conceptions of the most common of all the neuroses—hysteria.

A standardized or graphic description is impossible because hysteria never follows any definite course and is rarely seen as identical in its various manifestations. While the most frequent of all the psychoneuroses, either as the conversion or anxiety type, its very frequency is without doubt the basis of many erroneous and at times costly mistakes in diagnosis. The very fact that the patient's complaint is unusual and not a typical clinical entity should be a basis for increased search and examination rather than grasping too soon at the comforting diagnosis of hysteria. This should be the last diagnosis made, never the first or even near the top of the list. The fact that the patient is nervous does not in any wise lessen the likelihood of organic rather than functional disease.

My feeling is that in approaching the diagnosis of hysteria, two fundamentals should be borne constantly in mind, and that a diligent search should be made to establish these fundamentals before a diagnosis of hysteria is tenable. To develop hysteria a patient must have two constant factors, one inherent in his personality and one from an extraneous source. He must have, first, a neurotic or sug-

*Read before the Southwestern Virginia Medical Society at Abingdon, Va., April 14, 1938.

gestible personality and, second, a precipitating emotional trauma to develop a hysterical picture. The prehyseric personality is admittedly hard to define. The fact that all of us are potentially hysterical does not make the definition any less difficult. I prefer to consider each individual as having a neurotic threshold, somewhat as the renal threshold as seen in kidney disorders. Each of us can absorb a given amount of emotional and psychic trauma, but, if this amount reaches a level above our neurotic threshold, the flight from reality becomes too tempting and we protect ourselves by some type of hysterical response. What type or characteristic this hysterical response follows depends on the amount of emotional trauma involved, the turmoil which ensues in those around us, and the benefits, either real or imagined, that the threatened personality is gaining in the way of protection from disagreeable realities. The flight from reality can have almost any basis, some very deep-seated and obscure; others, so apparent as to be seen in a few minutes questioning. At the bottom of all, however, will always be found the basic requirements, that is, a personality that is fleeing from reality and is trying to find security, whether it is a child developing a useless arm to prevent taking examinations for which it is unprepared; an employee prolonging disability to prevent returning to a disagreeable foreman, or as a sexual incompatibility, which is frequently encountered, with the unexplained backaches, vaginismus, and many kindred types of hysterical manifestations, sometimes even amounting to invalidism in women to whom sexual relationships are distasteful, certainly with the present partner. At times the fear of pregnancy, conscious or subconscious, is at the seat of these marital hysterias.

Another phase of hysteria that is too frequently encountered is the tendency to take the condition too lightly. No greater mistake could be made. A hysterical patient, especially in the young person, is a candidate for a much graver mental disorder. Personally, I have seen several cases of major hysteria culminate later as full fledged and definite psychoses, especially of the dementia praecox type. The immediate prognosis in hysteria is practically always favorable, but the ultimate outlook as to emotional and mental stability should be carefully given. A large portion of schizophrenics seen give a history

of several hysterical episodes, and at times this condition is ushered in by a hysterical attack.

The treatment of the hysterical condition presents many difficulties, not the least of which is to explain the situation to excited and apprehensive relatives. Parents with an apparently unconscious daughter or son, or a young husband whose wife has a paralyzed limb is not easy to placate. Too much detail is an error, even though the underlying picture is very clear, and unless the circumstances are very unusual it is best to fall back on the old lay diagnosis of nervous upset or breakdown. An advantage in the approach to the therapy of these cases also is the fact that the depth of the emotional disorder varies directly with the patient's mental capacity. The more superficial and bizarre hysterical episodes are seen in those of a low mental capacity. The etiological factor is as a rule more trivial and the response to suggestion much more favorable and rapid. In those of a higher intellectual level, however, suggestion is not so favorably received and at times a frank discussion of the symptoms and their cause is the better course. The emotional conflict producing the functional symptoms should be outlined and explained, and the psychotherapeutic course outlined be rationalized to the patient.

The hysterical patient should not be told that there is nothing the matter with him. This is neither convincing to the patient nor true. A person who has an emotional conflict sufficient to disable or even at times invalid him for weeks or months certainly cannot be called in good health, and however ludicrous the symptoms may be to the doctor or his family, they are very real to the patient. Hysterical paralysis is just as disabling to the individual as organic or structural disease to the extremity involved, and at times more difficult to successfully treat.

Another point that should be mentioned in a discussion of hysteria is the frequent combination of organic and functional disease. This is especially true in post-traumatic conditions, where a slight or moderate residual disability becomes, because of the patient's personality and environmental conditions, a considerable handicap. To estimate accurately the situation in these cases is at times impossible, especially as to prognosis. Repeated examination and prolonged observation is the safest guide in these individuals in arriving at an ultimate diagnosis.

Differential diagnosis in hysteria should of neces-

sity cover medicine and surgery in its entirety, but, if the criteria mentioned earlier are used, will not be difficult, providing it is borne in mind as an ever present possibility. The confusion between the diagnosis of hysteria and malingering should, however, be mentioned. The history and background is important, especially as to previous emotional upsets. It must also be borne constantly in mind that the malingerer's symptoms are purely voluntary. They do not exist even in his mind and he must be ever constantly on the alert to protect and maintain the symptoms from which he claims to be suffering. Just the opposite is true of the hysterical subject. His symptoms are entirely involuntary and it is impossible for him to be separated from them in his present state of mind. In careful examination the malingerer will probably give himself away no matter how well coached, whereas the hysteric will show little or no variation in his findings during the same

examination. In brief, the malingerer needs detection; the hysteric needs treatment.

Thus, in a very sketchy manner, are some of the points to be considered in a discussion of hysteria.

In conclusion, I would like to re-emphasize:

1. That hysteria should be borne in mind as a possibility in practically every symptom-complex.
2. That the diagnosis of hysteria cannot be made by elimination alone, but that certain criteria must be fulfilled to warrant such a diagnosis.
3. That the hysterical patient is a sick patient and that the ultimate prognosis should be a guarded one.
4. That the treatment of hysteria is difficult; to actually cure the condition, emotional readjustment of the patient is absolutely essential. Drugs are of very questionable importance. Patience, understanding and tact are our indispensable weapons.

Wainwright Building.

REPORT ON TUBERCULOSIS SURVEY OF 480 TEACHERS AND CAFETERIA WORKERS IN ROANOKE CITY PUBLIC SCHOOLS.*

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Roanoke, Virginia.

The Roanoke City School Board, in an effort to combat tuberculosis, has been anxious to make sure if possible that none of the employed personnel are capable of transmitting the disease. This is in line with work done in many other localities in this country and abroad.¹

In Minneapolis in 1933, 2190 of the school employee personnel were tested with tuberculin; 1112 were definitely negative, while 1078, or 49.22 per cent, were positive. Those giving a negative reaction were considered unquestionably free of tuberculosis, while those giving a positive reaction had X-ray ex-

amination of their chests, and those of this group who were suspicious were given a physical examination.

One author, Ickert, found that 93.5 per cent of children taught by tuberculous teachers reacted positively, whereas only 25 per cent of children who did not have tuberculous teachers reacted. In Klein's series, 72 per cent of the children being taught by tuberculous teachers reacted. In a school in another city after the death from tuberculosis of a teacher, of the fifty-four children she had taught in the school, 40, or 74.0 per cent, gave a positive tuberculin reaction with eleven active cases, while of the remaining 184 children only thirty-six, or 19.5 per cent, gave a positive reaction, with two active cases.²

It is realized that the tuberculin test and one X-ray film do not constitute a complete examination for tuberculosis; they only provide evidence which may be used by the clinician in conjunction with history, physical examination and laboratory findings. It was felt, however, that the best method of conducting

TABLE 1
TUBERCULOUS

| AUTHOR | TEACHER | NONTUBERCULOUS TEACHER |
|--------------|---------|---------------------------|
| Ickert ----- | 93.5% | 25 % |
| Klein ----- | 72.0% | -- % |
| Frost ----- | 71.0% | 11.4% |
| Marx ----- | 74.0% | 19.5% |

Showing positive tuberculin reactions in school children taught by tuberculous and nontuberculous teachers, as cited by various authors.

*Read before the Roanoke Academy of Medicine, March 7, 1938.

the survey of presumably healthy employees was by the use of tuberculin and the X-ray film.

It has been the policy of the school board to treat all the employees with the greatest consideration. No person has lost his or her position because of a positive tuberculin reaction, and information regarding those found to be tuberculous has been kept confidential. It was clearly understood before the survey was commenced that none would be discharged because of tuberculosis but would be given a leave of absence for a reasonable period of time for treatment and would be reinstated as soon as this could safely be done.

While the employees were informed that the school board would like to have them tested, this was not compulsory; and if they preferred to waive the tuberculin test and simply have a chest X-ray this was perfectly acceptable. Thirty-seven elected to do this.

In order to standardize the tests, Parke Davis' first strength P. P. D. was used in each case, injected intradermally. This contained 0.0002 mg. purified protein derivative. I feel confident that had a stronger test been used we would have had a somewhat higher number of positive reactors; but as we did not deem it feasible to re-check with stronger tuberculin we confined ourselves to the single strength.

TABLE 2
TUBERCULIN TEST

| WHITE | | COLORED | |
|------------|--------|------------|-------|
| Positive: | | Positive: | |
| Cafeteria | -- 24 | Cafeteria | -- 7 |
| Teachers | -- 183 | Teachers | -- 62 |
| } -- 51.7% | | } -- 69.5% | |
| <hr/> 207 | | <hr/> 69 | |

SOME BRIEF EXTEMPORANEOUS REMARKS RELATIVE TO THE ORGANIZATION OF THE PIEDMONT MEDICAL SOCIETY AND ITS FOUNDERS.*

MARSHALL J. PAYNE, M.D., F.A.C.S.,
Staunton, Virginia.

Only an hour ago I learned that I would be asked to say something about the organization of the Piedmont Medical Society.

*Remarks made before the Piedmont Medical Society, at Farmington Country Club, Charlottesville, Va., December 9, 1937.

Negative:

| | | |
|-----------|--------|------------|
| Cafeteria | -- 10 | } -- 48.3% |
| Teachers | -- 164 | |
| <hr/> 174 | | |

Negative:

| | | |
|-----------|-------|------------|
| Cafeteria | -- 6 | } -- 30.5% |
| Teachers | -- 24 | |
| <hr/> 30 | | |

Table showing a summary of our findings on the Roanoke City School employees.

Of those tested one white and two colored persons were found to have active tuberculosis; viz., a white school cafeteria worker, a colored cafeteria worker and a colored teacher.

CONCLUSIONS

In the light of our present knowledge of the infectiousness of tuberculosis, children should not be in close association with active cases of tuberculosis. The advantage in detecting cases of tuberculosis in an early stage, and in keeping them away from children until they are noninfectious more than counterbalances the inconvenience and expense entailed.

It is interesting in this connection to note from the 1937 report of the tests of the Roanoke School children by the City Tuberculosis Association that, of 1268 tests made, 23 per cent were positive.

SUMMARY

During the recent survey of employees of the Roanoke City Schools, three active cases of tuberculosis were discovered who were ignorant of their condition. Discovering these cases before they were far enough advanced to have to stop work on account of their health improved their chances for recovery, and at the same time kept them from spreading the infection in the schools.

REFERENCES

1. J. A. M. A., Vol. 104, No. 21, page 1869.
2. J. A. M. A., Vol. 106, No. 19, May 1, 1936, page 1674.

The Piedmont Medical Society was organized at Orange Court House in the early spring of 1896. The territorial embrace of the Society was the Piedmont Section of Virginia. It was among the early rural district medical societies to be formed. It did

not at the time contemplate being a component society of the Medical Society of Virginia. Indeed, at that time no component society of the Medical Society of Virginia had been organized. The practitioners who engaged in the formation and organization of the Piedmont Medical Society did not contemplate or foresee the inclusion in membership of the faculty of the University of Virginia Medical Department. The men who organized the Piedmont Medical Society were all humble practitioners of medicine.

The credit for the actual suggestion and promotion of the organization must go to Dr. W. J. Crittenden, then living and practicing medicine at Unionville, Orange County, Virginia. Later Dr. Crittenden moved to Orange, and continued practice there until his death.

The physicians present at the first meeting, as I recall them, were: Dr. Ernest Woolfolk, Dr. Garnett, Dr. James M. Scott, Dr. G. W. Scott, Dr. W. J. Crittenden, Dr. Ellis, Dr. Walker, Dr. Row, and myself. And we can only rely on memory. The minute book is lost, and numerous attempts to find it so far have failed. Dr. W. J. Crittenden and Dr. Marshall J. Payne were appointed a committee to draft the constitution and by-laws. This committee modeled the constitution and by-laws of the Piedmont Medical Society largely after the constitution and by-laws of the Medical Society of Virginia modifying and adapting them to suit the needs of the new organization.

At the second meeting, or organization, shortly following the first meeting, the Piedmont Medical Society was established. The constitution and by-laws, as presented by the committee, were adopted. Dr. Ernest Woolfolk was elected President; Dr. W. J. Crittenden, Vice-President; Dr. G. W. Scott, Secretary.

The membership of the Society increased rapidly. The place of meeting was a side room, or the jury room, of the Orange County Court House building. The meetings were all interesting, instructive, and well-attended. The programs were, in the main, rather informal, and comprised a round-table discussion of prevailing or unusual diseases and medical problems. No set scientific papers were presented. Practically all of the members present had some part in the discussions of the subject.

I moved away from my old home in Orange County, spent several months in Richmond, and during the early part of March, 1897, located in Staun-

ton, Virginia. I cannot therefore give further details of meetings of the Piedmont Medical Society; hence must content myself with some rather hurried, brief reminiscences of the early members of the Society.

First, Dr. W. J. Crittenden. A very bright topographical anatomist, energetic, hasty, impatient, capable; an exceedingly rapid, fluent, lisping talker; talented and very familiar in the knowledge and uses of hundreds of remedies and multiplicity of measures employed for every symptom and sign. He drove and rode fast, splendid and well-kept horses. He was always prompt in answering calls. His friends were numerous. He was timid at night, and, if possible, never went alone after dark. It is said that on one well-known roadway, when alone at night, he would feel and see the presence of one of his deceased former patients. This patient, a woman, would join him and ride silently at his side, and at one regular place would turn away.

Dr. Ernest Woolfolk was ever calm, dignified, quiet, and likable. He was highly regarded by both the laymen and the medical fraternity. His success was uniform, marked, and deserved. His chief traits were his diagnostic ability and his simple, rational medication. He was an admirable man, a capable physician, and a lovable friend. His widow died recently in Staunton, Virginia.

Dr. James M. Scott was well-read in literature and in medicine; an exceedingly capable, intuitive and splendid diagnostician. Above all else, he was an accurate prognostician. I asked him on one occasion just how and why he was able to diagnose and prognose with such remarkable accuracy. His reply—not technical, not scientific, and never based on minute physical examination—was, "It is just like meeting an old friend in the road." We of this day lack, forget, or do not reckon with cultivated, close observation. Some recent contributors are now relying on observation of symptoms and signs before the laboratory can report. The close clinical observation and consideration of the patient's pulse was to Dr. Scott an art. Dr. Scott had an intuitive diagnostic sense. His prognostic ability was striking and enviable. His measures of treatment were simple, logical, and surprisingly effective.

Dr. J. T. Walker was not well known by any of us until the organization of the Piedmont Medical Society. However, he grew very quickly to be a popular gentleman and a valued member of the Society.

Dr. Lewis Holladay formally joined the Society shortly after its organization. I recall that at the time of the organization he assured Dr. Crittenden of his intention to be a member, but he was not actually present at the first or the second meeting.

Dr. Elhanan Row was a magnificent man, physically, mentally, and professionally. His professional attainment was regarded by a large circle of influential and popular friends as superior in the art of medical practice. Dr. Row's brother John was a versatile, accurate historian. The entire Row family were strong, intellectual people.

One of our charter members had an inconsequential weakness; that is, he was fond of toddy. (This trait was not lost in him. It is noticed among some of the very learned even of this day.) Each day at 11 A. M., he retired to his home under the full physical, physiological effects of the popular drink of this day—straight whiskey—only to reappear at 1 P. M., freshly shaven, immaculately dressed, and free of alcoholic effects. Some of you here may be interested in the quick, certain restorative or curative plan employed by Dr. — to antidote the effects of the "poly-toddies." The result of the antidote was surprising, magical, always certain, and effective. Some of you may need such a remedy; hence, if so needed, use ammonium muriate, gr. 30, q.h. If your engagements and habits of temperance (or rather, *intemperance*) conflict, I assure you that you may rely on the doctor's remedy. It is particularly effective for the cephalgia which follows alcoholic indulgences. Explanation: a rapid neutralization of the chemical and physical effects of alcohol by the ammonium muriate.

I have purposely withheld any comment on the Dr. Jones report of the birth of triplets till now. Our little city of Staunton, famous as the birthplace of Woodrow Wilson (an alumnus of our great University of Virginia) misses a far greater international fame, by just one. Some years ago, on April 26, 1910, Staunton found itself to be the birthplace of quadruplets. The parents are now living in Richmond, Virginia. Three of the children are now living. All four were born alive, one dying sometime later. I have a print of the mother and the three living infants.

The remarkable incident in connection with this eventful birth was that the elderly doctor in attendance remained until two children were born, thought that was the limit—or certainly enough—put



Mother and three of quadruplets born in Staunton in 1910.

on his hat and went home, only to be startled by a visit the next morning by the father, who informed the doctor that two extra children were born after he left the bedside. The people of the city of Staunton gave to the family an excellent milk cow for the feeding of the quadruplets.

Gould and Pyles' "Cyclopedia of Practical Medicine and Surgery" states that the frequency of triplets is one in about 8,000; and quadruplets, one in about 400,000. Edgar states, at page 147, that quadruplets may consist of double twins, or of triplets together with a single child. While Edgar does not give the frequency of superfetation, yet he states that several cases of six children at one birth have been reported.

I cannot at this time separate the Dr. Frank and Dr. G. W. Scott. I recall very distinctly that Dr. G. W. Scott later moved to Gordonsville and practiced his profession there successfully until his failing health compelled him to retire. I do not recall Dr. F. G. Scott as an early or charter member. My impression is that Dr. G. W. Scott who lived between Gordonsville and Orange Court House at that time was elected secretary.

Drs. Ellis and Garnett, according to my best recollection, were present at the organization meetings.

Any reminiscences of the physicians and surgeons of Orange County would be incomplete if the name

of Dr. William S. Grimes were omitted. Dr. William S. Grimes, Dr. Peter Mettauer, and Dr. Hunter McGuire were noted for their outstanding surgical knowledge and ability. I believe that Dr. W. S. Grimes was one of the most skillful and learned surgeons in Virginia of his time. Dr. Grimes lived from four to five miles in a southeasterly direction from Orange Court House. Orange County court days practically always found him in the village of Orange Court House. On the occasion of the regular court days, he met, examined, and frequently treated patients brought from considerable distance. Three cases in particular I well remember.

The first was Captain "Dick" Johnson, a patrol officer, who always rode a jenny and carried with him, to the day of his death, a long blacksnake whip, fastened to the front part or the pommel of his saddle. I knew this man Johnson, and attended him in his last illness—a cerebral hemorrhage. Dr. W. S. Grimes did for Captain Johnson a bilateral cataract operation, with perfect results in both eyes. I regret that I cannot tell you the technique of Dr. Grimes' cataract operation.

The second case: An emergency umbilical hernia operation was successfully done on my grandfather, Robert Roach, by Dr. Grimes. This operation must have been performed in the early 1880's.

The third case that comes to my mind, even more forcibly, for it is of exceedingly great interest in a diagnostic and prognostic sense: A young German lad, about fifteen or sixteen years of age, was ad-

mitted to the home of my uncle, Charles Payne, of the Wilderness. My uncle, not having children, intended to adopt this child. A few months subsequent to his coming into my uncle's home, in climbing into a wagon body, he fell and struck his right shin bone against the edge of the wagon body. The injury was regarded at the time as trivial. However, later it was observed by my uncle that a growth, or tumor, was developing at the site of the injury. This lad was taken to Orange Court House on a court day, and was seen first by Dr. Elhanan H. Row, who at once called Dr. W. S. Grimes in consultation. My uncle related to me, after I had graduated in medicine, that Dr. Grimes' brief and terse statement was substantially as follows: "I can amputate this boy's leg, but the growth will recur in the stump in the bone before the wound heals." Recall, now, that Dr. Grimes did bilateral cataract operation, and must of necessity have done clean surgical work. Dr. Grimes amputated the right leg at a mid-thigh amputation, and, true to his prognosis, the tumor did quickly return in the bone of the stump, and the lad several months thereafter died of a rapidly growing bone tumor. This was certainly an osteogenetic sarcoma. We can well note the diagnostic and prognostic ability of Dr. Grimes, as this case illustrates. You will understand that Dr. Grimes did not have the benefit of laboratory and X-ray facilities. I believe that many of us in this present day would be glad to share the intuitive diagnostic and prognostic ability of such a man.

ENDOSCOPY: ITS ROLE IN A GENERAL HOSPITAL.*

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and

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During the past year we have been making a study of our endoscopic records in regard to the value of such a unit in a small general hospital. This preliminary report is an effort in part to show its value. With this in mind some 250 cases are presented, which, we believe, represent a fair cross-section of the type of cases an endoscopist will encounter under conditions such as ours. The indica-

tions, methods, and results are disregarded in this report.

In 1926, Woodward¹ reported the year's work in endoscopy at the University of Virginia Hospital before this same society. Approximately twenty-five endoscopic procedures had been performed. In 1937, 127 procedures were performed. At the time of the first report, the indications for endoscopy in our hospital were mainly emergency foreign body and laryngeal work. From the analysis of this group of cases presented, it is clear that its field of usefulness has

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*Read before the Virginia Society of Ophthalmology and Otolaryngology, Williamsburg, Va., May 21, 1938.

expanded so that now the above-mentioned type of cases comprise only about one-half of the endoscopy done. For instance, it has been in the last few years that the abdominal surgeon has recognized its value in the treatment of postoperative-pulmonary complications such as atelectasis and massive collapse. The thoracic surgeon and internist are becoming more aware of the aid rendered by endoscopic studies in their intrathoracic problems.

| CHART No. I | | | |
|-----------------|------------------------------|--------------|------|
| Number of Cases | Type of Endoscopic Procedure | No. of Cases | |
| | | No. | % |
| 250* | Bronchoscopy | 215 | 58.2 |
| | Laryngoscopy | 83 | 22.4 |
| | Esophagoscopy | 71 | 19.2 |
| | Total | 369* | |

*Same patient under certain circumstances had repeated procedures, explaining the difference in number of cases and procedures.

The charts presented are self-explanatory. Chart I needs no elaboration. Chart II deals with the type of cases encountered almost totally by the endoscopist ten years ago. It may be mentioned that under the group of benign tumors are included cysts and inflammatory masses. Chart III indicates, in part, the more recent expended field of endoscopy.

Bronchoscopy as an aid in the location and treatment of lung abscess is not questioned. Witness the

| CHART No. II | | | |
|----------------|-----------|--------------|--------------------------------|
| Diagnosis | | No. of Cases | |
| | | No. | % |
| Foreign Bodies | Lung | 50 | 28.8% of total no. of cases |
| | Esophagus | 18 | |
| | Larynx | 4 | |
| | Total | 72 | |
| Tumors | Lung | 7 | 21.2% of total no. of cases |
| | Benign | 4 | |
| | Malignant | 3 | |
| | Esophagus | 5 | |
| | Benign | 0 | |
| | Malignant | 5 | |
| | Larynx | 41 | |
| Strictures | Benign | 19 | 4.9% of total no. of cases |
| | Malignant | 22 | |
| | Total | 53 | |
| | Larynx | 3 | |
| | Esophagus | 9 | |
| | Total | 12 | |

number of cases presented. This type of work is all referred from other departments. The value of bronchoscopy in bronchiectasis as a whole is questionable, but in certain cases none can deny that it has its place. The removal of crusts of exudate by

| CHART No. III | | |
|----------------------|--------------|--------------------------------|
| Diagnosis | No. of Cases | |
| Lung Abscess | 29 | 45.6% of total no. of cases |
| Bronchiectasis | 20 | |
| Tracheobronchitis | 12 | |
| Cardiospasm | 9 | |
| Tuberculosis of Lung | 5 | |
| Bronchial Asthma | 5 | |
| Atelectasis | 4 | |
| Miscellaneous | 30 | |
| Total | 114 | |

bronchoscopy, in the case of tracheobronchitis, has been a life-saving measure more than once. So-called cardiospasm is a questionable and dangerous diagnosis. We have had the misfortune to have seen two of our cases, diagnosed earlier as suffering from cardiospasm, return some months later with easily proven malignant growths in the lower esophagus. We hope in the future to reduce in part the prevalence of this diagnosis with the aid of the gastroscope. In a process of elimination with the aid of endoscopy, atypical cases of pulmonary tuberculosis have been diagnosed. Indiscriminate bronchoscopy is, of course, not advocated in this condition, for much harm may result secondary to the procedure. Thick, tenacious mucus has been removed from the bronchi of patients suffering from severe bronchial asthma, and others with atelectasis, with evident good results. Time does not permit further observations of this type.

The grouped miscellaneous cases in Chart III are mainly cases with negative findings, endoscopy being performed to eliminate organic pathology in such cases as "globus hystericus", suspected foreign bodies, investigation for hemoptysis, etc. Also in this group are a few unusual cases, such as peptic ulcers of the esophagus, pneumoconiosis, syphilis of the lung, and telangiectatic areas in the mucosa of the trachea and bronchi.

In concluding, it is repeated that, in this presentation, no effort is made to discuss endoscopy. A group of cases is presented to show the present trend and wide variety of conditions in which endoscopic studies are of benefit to the other departments of a general hospital. Conversely, the expansion of endoscopy is dependent on these other departments.

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104 East Market Street.

INJECTION METHOD FOR THE TREATMENT OF HERNIA—PRELIMINARY REPORT.

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and

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The historic trail of any new departure from the usual and customary methods of procedure in medicine is strewn with many varied opinions and interesting facts.

There is no more controversial a problem in private practice than that of injection treatment of hernia, which, by some, is regarded as unsafe and unscientific. And yet, it is not a recent form of therapy, having been employed by Velpeau in 1835. Rice stated, in his admirable and lucid text on the subject, that, as early as 1832, Jayne had used essential oils for this treatment. There has been a gradual change from the iodine solution, accidentally used by Velpeau, to our present-day solutions. In the cases to be presented, Searle's sodium sylnasol, a 5 per cent solution of the fatty acids of a vegetable oil extracted from the psyllium group, was the solution of choice. Monolate (Abbott) was used in two cases, but, since we experienced an ulcer of the leg through the use of this solution for varicose veins, we did not give it a sufficient trial to judge its merits. This ulcer formed over the tibia about two inches from the site of injection. The injection was accurately given.

METHOD AND TECHNIQUE

In all cases a general physical examination and urinalysis is advisable. Other workers in this field instruct patients not to indulge in exercise and exertion, which is, no doubt, a good rule to follow. We could not do this as our men were actively employed and the primary motive, no doubt, in their having injection treatment, was the fact that they could continue with their occupations. For example, one patient was a captain in the Fire Department; another was an aviator who, after receiving his injections, was in his plane within a space of two hours. It is essential, in most cases, to have a properly fitted truss, which must be worn constantly during the course of treatment and from three to six months thereafter. While the fitting and applying of the truss is supervised, most of our cases had no set rules regarding the constant usage of the truss, each case being in-

dividualized. Some were allowed to remove it at night after four or five injections while others continued to wear it day and night for as long as six months.

The injections were given at weekly intervals, bi-weekly, and a few as often as tri-weekly, depending upon the sensitivity of the individual to the injections.

With the patient reclining, the hernial sac, when present, is reduced. After cleansing the site of injection with benzine, followed by alcohol, an intradermal wheal, formed by injecting a few drops of 2 per cent cocaine-epinephrine solution, is made about one finger above Poupart's ligament just above the inguinal ring. The needle is inserted at an angle of about forty-five degrees through the skin and subcutaneous tissue until resistance is offered by the aponeurosis of the external oblique. The point of the needle is determined by inserting the finger through the inverted scrotum to the external ring. A 5 cc. Luer syringe, containing from one to two and a half cc. of Sylnasol is attached to the needle and after aspirating, a portion of the solution is injected into the internal crus. Then slowly withdrawing the needle the contents of the syringe are injected as far as the internal ring. The cord is held to one side with the finger. The patient is asked if he feels any pain. The injection should be painless, other than a slight warm sensation. A small band-aid is placed over the needle aperture and the site of injection lightly massaged for about two minutes.

Needles—We use various size needles:

- 22 gage 3" needle with stylet
- 20 gage 3" needle with stylet
- 22 gage 2½" needle without stylet
- 22 gage 2" needle without stylet

COMPLICATIONS

In one case an edema of the cord occurred, which was absorbed in a week without treatment of any kind—with no apparent permanent injury to the cord.

| PT. | DIAGNOSIS | INJ. | COMPLICATIONS | RESULT | REOCCURRENCES | MISCELLANEOUS |
|------|-------------------------------------|------|--|---------|---------------|--------------------|
| 1H | 1. O. R. rt. | 3 | — | closed | — | did not return |
| 2M | 2. O. R. rt. | 6 | — | closed | — | — |
| 3P | 3. Indir. rt. | 3 | — | closed | 5 mon. later | closed with 6 rt. |
| | 4. Indirt. lt. | 4 | — | closed | 5 mon. later | closed with 3 lt. |
| 4C | 5. O.R. lt. | 3 | — | closed | 1 mon. later | closed with 3 lt. |
| | 6. Scrotal rt. | 21 | swelling | closed | — | — |
| 5H | 7. O.R. rt. | 5 | — | closed | — | — |
| 6S | 8. O.R. rt. | 8 | — | closed | — | — |
| 7W | 9. Lt. ind. | 9 | — | closed | 5 mon. later | closed with 5 lt. |
| | 10. Rt. P.O. | 12 | — | closed | — | — |
| 8N | 11. O.R. rt. | 2 | — | ? | — | did not return |
| 9S | 12. O.R. rt. | 4 | — | closed | — | Pt. stopped coming |
| 10T | 13. O.R. rt. | 2 | — | closed | — | Pt. stopped coming |
| 11S | 14. O.R. rt. | 7 | pain 3 hours | closed | — | — |
| 12S | 15. O.R. lt. | 8 | — | closed | 4 mon. later | closed with 3 lt. |
| | 16. O.R. rt. | 10 | — | closed | — | — |
| 13M | 17. O.R. lt. | 7 | Fainted. Pulse 120. Re-acted fav. in 20 min. Rested one hour. | closed | — | — |
| | 18. O.R. rt. | 7 | — | closed | — | — |
| 14T | 19. O.R. lt. | 6 | — | closed | — | — |
| 15T | 20. O.R. rt. | 3 | — | closing | — | stopped coming |
| 16R | 21. O.R. rt. | 7 | — | closed | — | — |
| 17M | 22. O.R. rt. | 6 | — | closed | — | — |
| 18G | 23. O.R. rt. | 12 | — | closed | — | — |
| 19T | 24. O.R. rt. | 5 | — | closed | — | — |
| 20P | 25. O.R. rt. | 13 | — | closed | — | — |
| 21H | 26. Dir. Ing. | 5 | — | closed | — | — |
| 22-O | 27. O.R. rt. | 1 | — | ? | — | did not return |
| 23G | 28. O.R. lt. | 10 | Fainted first treatment | closed | — | — |
| | 29. O.R. rt. | 10 | — | closed | — | — |
| 24J | 30. O.R. rt. | 8 | Burning sens. for 20 min. | closed | — | — |
| 25H | 31. O.R. lt. | 8 | — | closed | — | — |
| | 32. O.R. rt. | 8 | — | closed | — | — |
| 26B | 33. Inc. hernia after appendectomy. | 8 | — | closed | — | — |
| 27B | 34. O.R. rt. | 7 | — | closed | — | — |
| 28R | 35. O.R. lt. | 6 | — | closed | — | — |
| 29M | 36. O.R. lt. | 8 | Felt dizzy upon standing. | closed | — | — |
| | 37. O.R. rt. | 6 | Fainted. Given ½ cc. Adr. Able to leave office in ½ hour. First visit. | closed | — | — |
| 30E | 38. O.R. rt. | 6 | — | closed | — | — |
| 31M | 39. O.R. lt. | 3 | — | ? | — | stopped coming |
| | 40. O.R. rt. | 3 | — | ? | — | stopped coming |
| 32H | 41. O.R. lt. | 7 | — | closed | — | — |
| | 42. O.R. rt. | 7 | — | closed | — | — |
| 33F | 43. O.R. lt. | 7 | Complained of slight pain for 24 hours. | closed | — | — |
| | 44. O.R. rt. | 7 | — | closed | — | — |
| 34H | 45. Ind. rt. | 8 | — | closed | — | — |
| 35V | 46. Dir. H | 8 | — | closed | — | — |

SUMMARY

| <i>Injection Method</i> <i>No.</i> | <i>Injections</i> <i>No.</i> | <i>Results</i> |
|---------------------------------------|---------------------------------|-----------------------|
| 1 hernia—direct | 8 | satisfactory |
| 1 " direct | 5 | " |
| 1 " scrotal | 24 | " |
| 1 " inc. p. appendectomy | 8 | " |
| 1 " re-occurr. p. herniotomy | 17 | " |
| 4 " indirect inguinal | 38 | " |
| 29 " potential | 223 | satis. with check up. |
| 38 hernias (total) | 323 | successfully treated |

Adding the two cases, which were examined by other doctors after treatment and considered as having no open rings (cases 1 and 8), we may state that forty of our cases gave satisfactory results.

| | | |
|------------------------|-----|------------|
| 2 potent hernias | 5 | |
| 40 | 328 | successful |

Six of the above cases had re-occurrence in periods varying from one to five months. This was due, no doubt, to an insufficient amount of injections. These rings were subsequently closed satisfactorily. The treatment consisted of from 3 to 6 injections. The remaining five cases, one of which had bilateral open rings, did not answer our correspondence. They had from 1 to 4 injections, respectively.

| | | |
|----------------------|------------------------|---|
| 1 open ring rt. | 4 | no check-up possible due to lack of coop- eration from the pa- tients. |
| 1 open ring rt. | 2 | |
| 1 open ring rt. | 3 | |
| 1 open ring rt. | 3 | |
| 1 open ring lt. | 3 | |
| 1 open ring rt. | 1 | |
| 46 hernias (total) | 344 (total injections) | |

We feel that 40 cases of hernias out of 46 hernias have been treated satisfactorily in periods varying from four months to two years.

Three patients fainted with the first treatment and were revived with aromatic spirits of ammonia and adrenalin. Inasmuch as one of these patients later had a similar reaction after withdrawing 5 cc. of blood for a Wassermann, we cannot attribute this to the method of treatment for hernia. One of the patients confessed that he collapsed whenever he visited his dentist. One patient, on the second day, had a swollen area of edema about the size of a hen's egg along the canal, which caused some discomfort but no severe pain, and disappeared in about a week of its own accord.

Three patients complained of pain, which in only one case was of twenty-four hours' duration.

DISCUSSION

There is considerable difficulty encountered when one attempts to evaluate the above results because, as in case one and eight, the patient is uncooperative and upon simple closure of the ring after one to four treatments visits elsewhere and is told that he has no open rings. He either neglects to return or writes an indignant letter to the effect that he has been examined and told that he "has no hernia and no signs of ever having had any."

Another difficulty encountered is that, even though rejected for an industrial or civil service position because of open rings, the patient, reapplying for an examination, may be examined by another doctor whose standards for open rings differ, and, because he is accepted for this position, he fails to return and resents having been subjected to treatment.

In our examination of thousands of men we find no standard of size of external ring satisfactory, because it was demonstrated in case number 4C that the ring was less than the index finger in diameter and yet the patient had a large scrotal hernia.

In other cases, in which the ring was two fingers open accompanied by strong underlying musculature, there was no hernial sac present and no marked impulse on coughing.

Many doctors do not consider an open ring a potential hernia, which bewilders the patient when he visits several physicians of opposing schools of thought. It is as embarrassing to one to have considered a patient as not having a potential hernia and later have him rejected when applying for a position in the State of New York, as it is to inform him of an open ring and advise him to have treatment or inject

him from one to three times only to have him told he has not or never had any sign of a hernia and he is accepted for employment. These remarks, however, had no bearing upon the efficacy of the injection treatment of hernia. In all, seven patients did not cooperate sufficiently to determine the result of the treatment. Inasmuch as two of these were told they had no open rings after treatment, injections must at least have been temporarily effective after three injections or the physician had a different standard of measurement for open rings. We do not consider these rings permanently closed.

The incisional hernias, one following appendectomy, the other recurring after a herniorrhaphy, were closed after eight and seventeen injections, respectively. Both patients are now leading a strenuous physical life without the aid of a truss; one is a fireman and the other is an active participant in the gymnasium course for the same position. Both of these patients were fitted with an improvised truss consisting of a padding with adhesive tape and the upper part of the smaller sized elastic abdominal and scrotal supports.

CONCLUSION

Rice stated that one should not attempt a closure of a ring larger than 3 cm. We believe this rule is a good one and have adopted it as a general rule.

However on two occasions the rings were larger than 3 cm and, although the patient was advised that an operation was indicated, to our great surprise the rings were closed upon completion of treatment. In our experience with open rings, with or without impulse—the so-called potential hernia—the injection method is the therapy of choice because of adequate closure of ring and canal without danger or pain, and without hospitalization with its expense and loss of time from work. Our patients were continuously employed without economic loss to society.

With this in mind, we recall one case which preferred the injection treatment. We informed the insurance company involved that in our opinion the patient could be successfully treated by injection therapy. We were advised that they would authorize us to operate but not to inject because this form of treatment was still in the experimental stage.

These few cases do not prove much. It is with the intention, however, of assisting in the progress of medicine in general, and, specifically, to aid in the raising from the experimental state this form of treatment for hernia, that we submit this experimental data to the increasing number of favorable reports, and thereby assist toward making the injection treatment a recognized procedure for selected cases of hernia and open rings.

156 East 52nd Street.

MANAGEMENT OF TRICHOMONAS INFECTION IN THE FEMALE.*

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I know of no other condition in which the diagnosis is so readily made, the results obtained so good, and the patient so gratified, as that of Trichomonas infection. This is a condition that is common both to the medical man and the surgeon. The reason that we do not find it more often is because we do not take the time to look for it, and right here let me impress upon you the importance of inspection as a routine procedure in pelvic examinations. No pelvic examination is complete without it, and very frequently a diagnosis can be made by inspection alone.

The cardinal symptoms are profuse watery or thick irritating mucous discharge, which produces

itching and burning about the vulva and perineum. It has a sour or fetid odor, is usually greenish in color and frothy in consistency, containing many small bubbles. The introitus and external genitalia in the acute stage are usually red, and show evidence of scarification due to the scratching. In this acute stage the examination is extremely tender, and difficult to make, especially with a speculum. In the sub-acute or chronic infection the examination is not so acutely tender, and on inspection the vaginal mucosa presents granulated hyperemic or punctate lesions, and the term "strawberry vagina" is often used. This irritating discharge is always acid in reaction, as the trichomonads require an acid medium as their habitat. In making an examination for Tricho-

*Read before the Southwestern Virginia Medical Society at Abingdon, Va., April 14, 1938.

monas, it is important not to use any lubricant such as K-Y jelly, as the organism is very sensitive to this, rendering them immotile, in which condition it is very difficult to differentiate them from a pus cell. The diagnosis is made by making a smear, preferably a hanging drop. The patient is properly draped, and a speculum which has not been lubricated is inserted, and with an applicator a drop of the secretion is obtained from the fornices or cul-de-sac preferably, and immediately dipped or submerged in three or 4 cc. of warm normal saline. A hanging drop is made, and it is well to examine under high dry lens. It is better to first use a low power, and if many organisms are present one can see the oscillating movements in the field, and then switch to the high power so as to bring out the details.

The *Trichomonas* is a flagellated protozoon which may be pear-shaped, oval, round, or irregular, with an ameboid process. It has a nucleus close to the anterior end and four flagelli are usually easily visible. Should the patient be so tender that the introduction of a speculum is difficult, one can separate the labia gently and introduce an applicator well back into the vagina to obtain the secretion, or if one prefers he could make the pelvic examination with dry gloves and after withdrawing the gloved fingers introduce the tip of the fingers into the normal saline and use this for the hanging drop. It is important in examining this to cut down the light of the scope just as we do in looking for hyaline casts in the urine. If we do not, we will often look through and miss them. It is important to ask the patient if she has used any form of a douche during the day of examination or the preceding day or two, because the *Trichomonas* organism will be rendered inactive by even a simple warm water douche. If the organisms are not found, yet the symptoms of a leucorrhea are, or have been, present, do not tell your patient she does not have *Trichomonas*, but repeated examinations should be made. The trichomonads are usually located about islands of debris or pus cells. In any leucorrhea, always make a smear for gonococci and a hanging drop for trichomonas.

The trichomonads are rarely ever found in acute GC infections of the cervix, but are often found in the chronic state. Should there be a history of some recent change in the sexual life of a woman and her husband, or lover, the patient may think she has a venereal infection. Physicians who are not familiar

with the vaginal flora and who fail to examine slides of the vaginal discharge in these cases will frequently err in the diagnosis. Often, patients will come in and say, "Doctor, I have a right bad discharge following my menstrual periods which seems to improve after a week or two". Remember that blood is a hotbed for the trichomonads, and those discharges that are aggravated by the menstrual period are nearly always pathognomonic of *Trichomonas* infection. Your patient may complain of irregular spotting in between her periods, and dyspareunia, or painful coitus, may be a pronounced and very important symptom of this common vaginal infection. In your cases of pregnancy, question her as to the amount of vaginal discharge. There is normally a moderate increase during pregnancy, but make a hanging drop for *Trichomonas* and you will be surprised to find a high percentage infected with *Trichomonas*. It is very important to treat them in the pre-natal period, and, as Goldstein has pointed out, in 152 cases a morbidity rate, regardless of the mode of delivery, ran considerably higher than those free of this condition. His figures ran 75 per cent increase in morbidity in the white, and 41 per cent in the negro.

Urinary complaints occupy an important place in the symptomatology of *Trichomonas* vaginitis. Careful questioning will elicit a history of urinary difficulty in 50 per cent of the cases, of which the more important are frequency, urgency, dysuria, and nocturia.

The trichomonads have been found in women who have senile atrophy of the vagina, in married women, including pregnancies, in virgins during and before puberty, in young children, and in the prostatic secretion of men. The mode of infection is not known, but the most common belief is that the rectum is the focus of infection. These organisms invade the urinary tract, Bartholin glands, and also the urethra of the male during coitus, and in the latter condition the husband may re-infect his wife in spite of her treatment. The proximity of the rectum to the vagina, and the habit of most women in cleansing the anus toward the vagina after each defecation would allow an easy access of the trichomonads to the vagina.

TREATMENT

The multiplicity of treatments for this condition is evidence that there is not any specific for *Trichomonas*. However, most any of the treatments may

prove satisfactory in the majority of cases, and only about 20 per cent are obstinate and will require a change to some other form of treatment. The powder treatment is probably the most popular. Gellhorn uses a powder consisting of stovarsol, an arsenical preparation, two parts to seven parts each of kaolin and sodium bicarbonate. The introduction of this powder into the vagina can be readily accomplished by the use of a small blower such as is used for insect powders, as the common Flit can, and may be obtained at any drug store for ten cents. The patient is placed in the lithotomy position, and, with a speculum placed, the powder is sprayed over the entire vaginal mucosa, moving the speculum so as to expose that surface which had previously been concealed. Before using this powder, it is very important to dry the vaginal mucosa thoroughly with cotton, and a great number of men flush the vaginal mucosa with tincture of green soap first, then thoroughly dry before spraying the powder. This treatment should be repeated daily for six days, and reinstituted for three or four days following the next period.

Gellhorn advocates the use nightly of a vaginal suppository, consisting of 1 per cent picric acid, in the interval between the close of the first treatment and the next period. The following morning the excess of the suppository is removed by a two-quart warm-water douche to which has been added two drams of U.S.P. lactic acid. Carbasone or arcetosone, both arsenicals, may be substituted for the stovarsol. The prescription we use is as follows: Arcetosone, or Carbasone, drams 1, Kaolin and Sodium Bicarbonate of each drams 3. Make into twelve powders. Some men differ as to the use of douches while using the powder, and my experience has been that good results will be obtained in the great majority of cases by using the powder six days consecutively with no douches until after the last treatment, and then have the patient return about three days following her period for a series of three treatments on consecutive days. Always make a hanging drop following the menstrual period for three or four months, as recurrence is one of the distinctive qualities of the *Trichomonas* infection. This powder can be used with a special insufflator, which is an advantage over the Flit can in that it fits tightly into the vaginal orifice and distends the

vaginal mucosa. The speculum is not necessary if we use the latter.

Remember that the trichomonads abhor a dry atmosphere, while they thrive in moisture. It is important to spray the external genitalia with the powder as well, and after the first, second, or the third treatment the patient usually experiences marked relief, and is most grateful for the same. The powder may be kept in the vagina by inserting a cotton pledget, as we are withdrawing the speculum. This powder treatment is probably the most satisfactory during pregnancy, as there is not as much manipulation as there is in other forms of treatment, therefore lessening the chances for abortion or miscarriage.

Another popular treatment is with silver picrate. Winther cleanses the vagina well with hydrogen peroxide, thoroughly dries the mucosa, and sprays a powder consisting of 1 per cent silver picrate in kaolin. The patient is instructed to insert a vaginal boro-glyceride gelatin suppository containing 2 gr. silver picrate nightly for six nights. Then return for another insufflation which is to be followed by six more suppositories, making a total of twelve. Thus two insufflations and twelve suppositories constitutes a routine treatment.

In patients who find it difficult to come to your office, carbasone suppositories can be used with relief in the majority of cases. The patient is instructed to insert one each night for six nights, and then one weekly until her next period. Following her period she is to use one each night for three or four nights. In the more obstinate cases, in which the trichomonads persist in spite of treatment, it is well to use either carbasone or silver picrate suppositories, or whatever method of treatment is being instituted, nightly during the menstrual period, as well as three or four days following. Always have your patient return three or four days following her period and make a hanging drop; if trichomonads are found, repeat the series. In the average case, they will get complete relief after two or three menstrual periods.

Ayer and Neil treat their patients by "soda packs". They dry the vagina thoroughly, and insert one or two ounces of sodium bicarbonate, the kitchen variety, into the vagina. They instruct the patient to take a douche the following day, using one or two ounces of soda to one quart of warm water. The soda gives

rise to a burning sensation for three to five hours, but they usually control this with sedatives. They give the treatment on alternating days, and the hanging drop is made at each treatment. Usually three to five packs reduce the organisms to a point where they can not be found. This series is repeated following the next menstrual period. They keep the urine alkaline during the entire treatment.

Another form of treatment which comes in conveniently, and especially in our indigent cases, is the saline treatment. The patient herself can easily prepare an approximate 20 per cent solution by dissolving one glass full of salt in four glasses of warm water. In order to secure an abundant vaginal flushing, this amount of salt and water can be doubled. The solution is used at body temperature, and the douching is well tolerated by the vaginal mucosa, although the first treatment may cause a burning sensation. In nearly all cases the acute symptoms subside after two or three daily douches. The patient is instructed to use this daily douche for ten days, and repeat following the next menstrual period. It is important in douching that the patient lie down, not to sit on a pan or commode, as the solution runs out about as fast as it goes in. It is easy to place a board across a basin on the floor to support the hips, and to not hold the douche bag over two or three feet above the hips, allowing the solution to remain in the vagina fifteen to twenty minutes.

The patient is instructed to cleanse well after each defecation with 1:1000 solution of bichloride of mercury, from above downward. She should insist on no one else using the douche bag, and in giving the douche to hold the labia firmly around the nozzle so as to distend the vagina. The patient should change clothes daily, and boil after wearing. She should be told that the condition is contagious. She should not use the bath tub unless it is scalded afterwards.

In the more obstinate cases, it may be necessary to

cauterize the cervix. This will sometimes clear up the condition when other treatments seem to have failed. It is only an adjunct to the other treatments, however, and does not replace them.

CONCLUSIONS

As Osler once said, "Always study medicine, and always suspect syphilis". So we in our treatment of vaginal discharges should always suspect trichomonas. Make a hanging drop or a smear for Trichomonas, and a smear for GC. Remember that blood is a good hot-bed, that Trichomonas has a strong tendency to recur following the menstrual periods, and follow the case through to a minimum of three to four months before discharging.

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MENINGITIS (STREPTOCOCCUS HEMOLYTICUS) SECONDARY TO OTITIC INFECTION.

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In reporting this case I want to state that the medical supervision was directed by Dr. H. M. Doles, and the writer's part was secondary and cooperative in character.

CASE REPORT

Case No. 6856.—A white male, age fifteen years, on November 23, 1937, was taken with a sore throat and head cold, associated with fever and general

malaise. He was taken out of school and on the night of November 24, was taken with a sudden, severe pain in the right ear. The next morning the ear was discharging yellowish pus. It continued to drain without interruption until December 10, when it ceased abruptly as it began. During this time the patient remained at home, part of the time in bed and part up and about the house, complaining of pain in his ear and head, and loss of appetite. The pain became more intense on the left frontal and occipital region, constantly present, and it became general in character. He wanted to sleep most of the time, became more stupid, and showed irritability whenever disturbed. The headaches became more severe, stupor more marked, and temperature elevated. He vomited five times on December 12. At this time his mother noticed that the left eye was turned in and there were signs of stiffness of the neck and the patient was more stupid. The family physician was called in who immediately sent the patient to the hospital.

December 13, 1937, A.M., patient was admitted to the Norfolk General Hospital. He was carried in on the stretcher. He was confused, disoriented, stuporous, and irritable. Physical examination showed a well-developed white adolescent male in a fair state of nutrition, who was stuporous, confused, irritable and non-cooperative. There was a stiffness of the neck with pain upon manipulation. The left external rectus was paralyzed. Pupils did not contract well down. Unable to see fundus on account of patient resisting. There was a bilateral Kernig, and Brudzinski was positive. Obviously, we had a case of meningitis. The right ear drum had a small central opening with yellowish sero pus bubbling through as though under pressure. The drum was not red or bulging, and there was no sagging of posterior superior canal wall; in fact, the drum had the color and somewhat the appearance of the skin of the external auditory canal, and we were unable to recognize any of the normal drum reflexes. Lumbar puncture was done. The initial pressure (IP) was between six and seven hundred mm. of H_2O . Twenty cc. of cloudy fluid was removed. The final pressure (FP) dropped to 230 mm. Pandy marked increase. Sugar 5 mg. A smear and culture was positive of streptococcus hemolyticus and diphtheroid bacilli. The same organisms were found on the smear from the right ear. The cell count of the spinal fluid was 6000 per cmm. A second spinal

puncture was done the same day and the cell count was 9500 per cmm. The RBC was 4,040,000 and the WBC was 20,400 per cmm. Polys 97 per cent, small lymphocytes 3 per cent, Hemoglobin 78 per



Roentgenogram taken December 13, 1937.

cent. Urinalysis: red color, cloudy, acid, sp. gr. 1.017, albumin and sugar positive, many blood cells and epithelium and pus cells present. X-ray report by Dr. Magruder: The left mastoid was clear. There was a loss of intercellular elements with breaking down and softening in right mastoid, which was considered surgical. Temperature 104.3, pulse 100 and respiration 30 per min. Having made the diagnosis of bacterial meningitis, the craft was called together after meditating upon the seriousness of the condition, it was agreed upon to defer surgical intervention. The order of the day was spinal punctures, sulfanilamide gr. xv, bicarbonate of soda gr. xv, with water vi oz., every four hours, high protein diet, intermittent feeding, and blood transfusions.

December 14, 1937: Spinal pressure (IP) 370 mm.; 20 cc. fluid removed; FP 110 mm.; cell count 2600 per cmm. Temperature 103. Pulse 106. Respiration 24. 500 cc. of 5 per cent glucose in saline given intravenously. WBC 26,000; polys 90 per cent; small lymphs 10 per cent. Urinalysis brown color, cloudy, acid, sp. gr. 1.009, trace albumin, sugar positive. Many blood cells. Microscopically—few epithelial and pus cells.

December 15, 1937: Patient very uncomfortable. Pains in head, restless, somewhat confused, recognized his mother. Spinal fluid cell count 1100. Pandy marked increase. 35 cc. fluid removed, IP 350, FP 110 mm. There was active bilateral jugular response, minimum rise of sixty points on either side. Urinalysis remained the same, except sugar free. Tympanic membrane showed signs of light reflex. There was no drainage.

December 16, 1937: Patient seemed brighter, had a fairly good night. There was less rigidity of neck present. Spinal puncture IP 300 mm.; less cloudy.

15 cc. of fluid removed. Cell count 1040 per cmm. Pandy marked increase. Complained of severe headache, following the puncture. At 7 P. M. second spinal puncture was made. IP 500 mm. Fluid less cloudy; between 35 and 40 cc. of fluid removed. FP 105 mm. Urinalysis essentially the same as previous specimens. Blood examination: Hgb. 86 per cent, RBC 4,130,000, WBC 14,000, polys 80 per cent, small lymphs 19 per cent, eosinophiles 1 per cent. Blood Wassermann negative. The second and third spinal fluid cultures were negative; also blood culture negative.

December 17, 1937: Patient complained of severe headache, was restless and irritable. Spinal puncture IP 450 mm. 30 cc. fluid removed; cloudy. FP 100 mm. Temperature 103, pulse 85, respiration 20. Cell count 700. Pandy marked increase.

December 18, 1937: Patient's condition remained the same. Spinal puncture IP 400 mm. 25 cc. fluid removed. FP 90 mm. Cell count 770 per cmm. Culture of spinal fluid negative. Blood count: Hgb. 70 per cent, RBC 3,740,000, WBC 10,200, polys 80 per cent, small lymphs 18 per cent, eosinophiles 1 per cent, basophiles 1 per cent.

December 19, 1937: Spinal fluid cell count 950.

December 20, 1937: Spinal fluid cell count 340.

December 21, 1937: Spinal fluid cell count 330.

December 22, 1937: Spinal fluid cell count 130. IP between 250-300 mm. of the above punctures. Blood examination, Hgb. 74 per cent, RBC 3,880,000, WBC 14,400, polys 90 per cent, small lymphs 10 per cent.

December 23, 1937: Spinal puncture, cell count 165; globulin moderate increase. There was no change in paralysis of the left external rectus muscle. The pupils dilated equally and regularly, reacting promptly, but not well down, and then would spring back. There was about four diopters of swelling of both discs. Veins tortuous. There was a recent fan-shaped retinal hemorrhage adjacent to upper edge of right disc.

December 25, 26, 30, 1937: Spinal punctures were made. The last puncture on the 30th showed IP 240 mm. 30 cc. fluid was removed. FP 70 mm. Left jugular pressure to 128 mm. Right jugular pressure 140 mm. Pressure fell promptly to 80 mm.; bilateral jugular compression to 180 mm.

January 1, 1938: Patient gradually showing improvement. More comfortable and takes more interest. 300 cc. citrated blood given intravenously.

There was about 2 diopters swelling of the disc. The lumbar punctures and sulfanilamide treatments were discontinued on December 30.

January 3, 1938: Patient shows improvement. Temperature, pulse, respiration normal. Mental reaction more normal. Complained mostly of pain over left frontal region. Blood count RBC 3,444,000, WBC 5,000, neutrophils matured 37 per cent, small lymphs 57 per cent, eosinophiles 5 per cent, basophiles 1 per cent.

January 9, 1938: Patient allowed back rest. Showed improvement. The left eye showed a tendency to move outward. The papillitis had disappeared, with the exception of slight haziness of the disc.

January 10, 1938: Urinalysis negative. Patient allowed to sit up in the rolling chair for an hour in the morning and afternoon. He complained of weakness in the legs when he tried to walk. There was no rigidity of the neck. Kernig and Brudzinski were negative.

January 12, 1938: Patient shows daily improvement in every way. Takes more interest. Allowed to be up in chair. His mental reaction is normal. Said that his legs were very weak. The fundi practically normal except there is a hyperemia of the retina. The left external rectus showed more strength. The retinal hemorrhage of right eye practically absorbed. There was no evidence of middle ear or mastoid manifestation from clinical or cytological finding. Patient did not complain of headache, visual or aural disturbances. The only complaint was weakness in his legs. The patient was discharged from the hospital January 14, 1938, with instructions to report to the outpatient department.

March 8, 1938: Vision 20/15 OU. There is no muscular imbalance, fundi normal, no evidence of retinal hemorrhage in right eye. Special ear examination: hears ordinary conversation at twenty feet, hears the lowest whisper through the six-foot speaking tube on each side. Weber's test shows no lateralization. Schwabach's test, both ABC diminished especially for low tones; Right ear—128, A 25 sec., B 12 sec.; Left ear—A 25 sec., B 10 sec. 512 C; Right ear—A 60 sec., B 25 sec.; Left ear—A 90 sec., B 30 sec. With noise apparatus in left ear he hears low sounds indistinctly; otherwise normal hearing. Caloric test—Right ear water temperature 65 F. Time of irrigation 4 min.; amount of water

used 2500 cc.; horizontal nystagmus to left 45 sec. Left ear 4 min. irrigation, 3500 cc. water used; horizontal nystagmus to right 60 sec. duration. Fistula tests negative on compression. The tympanic membranes normal light reflex. The right drum is retracted and the malleus stands out conspicuously.

March 30, 1938: X-ray report: Left mastoid is clear. There is some increase in sclerotic change around the antrum at the tip and along the petrous ridge of the right mastoid. There is lack of definite cellular outline throughout with an intermingling increase in sclerosis. There is, however, some definite aeration in the petrous triangle, and in the superficial cells. Impression: Chronic right mastoiditis.

In conclusion and recapitulation: Attention is directed to the significance of the otitis media fulminans less than twelve hours from the time of the severe aural pain until rupture of the tympanic membrane; also the chronological and sequential order of events from the beginning of acute rhinitis, pharyngitis, tonsillitis, otitis media fulminans, nephritis, mastoiditis, and finally bacterial meningitis with recovery.

There was a spinal fluid pressure variation from 70 mm. to about 700 mm. of water, with variation upon pressure of internal jugulars.

From December 13 to the 30, there were 19 spinal punctures made, 500 to 600 cc. of fluid removed, between 1000 to 1100 grains of sulfanilamide given by mouth, and 800 cc. of citrated blood given intravenously. The spinal fluid cell count ranged from 130 to 9500 per cm. Temperature from 97 to around 105 degrees. On one occasion there was about 4 diopters of papillary edema, with recent hemorrhage in retina in right eye. There was a paralysis of the left external rectus muscle. Urinalysis indicated acute nephritis. Bacteria were positive in the spinal



Roentgenogram taken March 30, 1938.

fluid both on culture and smear. The same organisms were positive from the right ear, namely, streptococcus hemolyticus and diphtheroid bacilli. There were two roentgenograms taken of both mastoids, the first December 13, 1937, and the second March 30, 1938. The blood cultures were negative.

The aural surgeons are not unmindful that a foci of infection in the mastoid should be treated any other way but surgical, and to do otherwise would not be in line with the long established surgical principles of drainage. We should not set a precedent by illogical reasoning and say: "The management and outcome of the second case is likened unto the first." The consensus of opinion among the aural surgeons is that the infected mastoid should be drained in conjunction with sulfanilamide, blood transfusions, spinal drainage and general supportive treatment. This case was last examined March 30, 1938, and apparently there were no sequelae. *The recovery seems almost miraculous.*

Without surgical drainage of the mastoid, is this a potential case which will become manifest at some future time? And, by doing a simple or radical mastoidectomy or apicectomy, would the future outlook be brighter? This cannot be intelligently answered now.

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THE PREVENTION OF HEARING DIFFICULTIES IN CHILDREN— THE ROLE OF THE FAMILY PHYSICIAN.*

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It is beginning to be recognized generally that a certain number of children in our schools formerly classified as backward or defective fall into such

*Read before the Southwestern Virginia Medical Society at Abingdon, Va., April 14, 1938.

groups solely because of defective hearing. In this paper I shall not deal with those unfortunate tots who are totally deaf from birth or those markedly deafened by meningitis, encephalitis, congenital lues, injury, or other cause. The cases with which I shall

concern myself are those that fall in the borderline between normal and markedly impaired hearing. It is this group of cases that are often undiagnosed and untreated at the early age when prompt recognition and adequate therapy would mean the difference between normal hearing and deafness.

As Berry¹ says in his paper, *The Psychology of Progressive Deafness*: "As a child: the onset is gradual. There is no concern. Neither child nor parent nor doctor appreciates the grave prognosis. The second stage finds a beginning handicap. The father thinks Tom is inattentive; the mother calls it preoccupation; the teacher suspects stupidity; his comrades think that he does not care, that he is queer or self-centered. The boy with no standard of comparison will not appreciate his own deafness at first, but will blame lowered voices or adventitious noises for his failure to hear." This becomes a mental hazard which develops habits of deceit in hiding the condition by admission of ignorance when he really does not understand what has been said.

In many metropolitan centers a wholesale testing of school children has revealed some interesting facts.

The New York League for the Hard of Hearing has for several years been conducting tests for school children on a small scale, but it was only after the present beneficent administration came forward with WPA money that any large scale investigation could be made.² In the year ending June 1, 1936, 668,454 children in elementary and junior high schools were tested with the 4A audiometer, an instrument designed for the mass testing for pure tones and for speech. Hearing impairments were classified as follows:

| | | |
|-----------------|--------|-------|
| Both Ears ----- | 21,617 | 3.2% |
| Right Ear ----- | 27,315 | 4.0% |
| Left Ear ----- | 25,665 | 3.8% |
| <hr/> | | |
| Total----- | 74,587 | 11.0% |

Now here is a figure I feel is very significant: the total number of children with ear conditions having *normal hearing* was 51,879, or 7.7 per cent. This group included those with earaches, running ears, etc. Of course each child is a potentially deaf adult.

Combining these two groups we find 18.7 per cent of these children are potentially handicapped by impaired hearing. Another reason I find these statistics interesting is that in New York City all obviously and markedly deafened children are sent to special

classes for the handicapped, thus removing the worse cases from the above survey.

Now let us consider a group of high-school children for a moment. A survey of 70,768 cases revealed the following:

| | | |
|--|-------|-------|
| Number of children with impaired hearing in one or both ears---- | 5,036 | 7.0% |
| Number of children with ear conditions having no loss of hearing-- | 3,054 | 4.3% |
| <hr/> | | |
| Total----- | 8,090 | 11.3% |

Is it not logical to assume that a goodly portion of this 7 per cent decrease may be due to the fact that some children were unable to keep up in their studies due to this handicap and hence failed to reach the high schools? The economic implications are obvious, I believe.

Such work has been started by legislation in many states, including California, Iowa, Minnesota, New Jersey and Pennsylvania. In Minneapolis the reduction in incidence of notable hearing loss in school children over a ten-year period has been from 8 per cent to 5.3 per cent.³

Now, you ask, what are the factors concerned in the development of deafness in the school child? We are all familiar with the anatomic relations of the ear with the respiratory tract. The commoner causes of childhood deafness are shown in this table.

1. Sinusitis. This does not mean that the child must have headache or other painful manifestations of sinus disease. The presence of profuse postnasal discharge, a chronic nasal stoppage, excessive nose-blowing, are diagnostic points that this condition has in common with the second important cause of hearing impairment.

2. Hypertrophied and diseased tonsils and adenoids. The history of mouth-breathing, snoring, failure to gain weight, poor school work will almost clinch the diagnosis here.

3. The diseases of childhood are a major cause of diseases of the ear,—in fact, otitis media is probably the most common complication of pneumonia, scarlet fever, diphtheria and the other childhood diseases. Meningitis and encephalitis cause nerve deafness, a different type from that above, more severe and more hopeless in prognosis.

4. The fourth place in etiology belongs to the presence of foreign bodies in the external canal, usually impacted wax. These are sometimes very difficult to remove, especially if composed of organic

material. The latter will swell on contact with water so irrigation is contraindicated. Beads, pencil leads, and insects are often found here and may give violent symptoms.

5. Diving or swimming under water is becoming of such moment in causing ear pathology that the eye, ear, nose and throat section of the *A. M. A.* in 1932 formed a committee for study of methods of control of diseases transmitted by swimming and for propagation of information to public health authorities. Any child with respiratory pathology should be forbidden the use of public bathing pools. The use of pools instead of the old swimming hole has brought some bad features along with the decrease in bacterial counts. The chemicals used are irritating to the eyes and nose and in some instances cause quite stubborn inflammations.

6. Traumatic injuries to the ears are serious causes of hearing difficulties. Rupture of the drum may occur in a blow over the ear, severe concussions, or in fracture of the skull.

7. Congenital syphilis is a cause of deaf-mutism, and also cases that come on later in life, often following or during specific treatment. The prognosis is very poor.

8. Toxic neuritis of the auditory nerve appears less frequently in children than in adults. However, quinine, chenopodium, salicylates and arsenicals must be watched for damage to the nerve. Such damage is often irreparable.

9. Systemic diseases often affect the hearing especially the following:

- A. Malnutrition
- B. Endocrine dyscrasias
- C. Deficient diet
- D. Allergic diseases
- E. Anemia.
- F. Malocclusion of teeth

The eighth nerve is one of the most sensitive in the body to toxic influences whatever their origin, so many conditions may be added to the above general diseases.

The old adage, "An ounce of prevention is worth a pound of cure" is nowhere more applicable than in the prevention of deafness and its attendant handicaps. The early diagnosis before a child has become physically and psychologically impaired is the aim of the work being done by the American Society for the Hard of Hearing.

The diagnosis is not easy in slight impairment in young children but in the school child it is easier to secure cooperation. First, our ultimate aim must be the ownership of a 4A audiometer by the Health Department or School Board of the cities and counties for the routine testing of the children each year. As guardians of the public health, we must advocate this program before the federal government takes it over. The cases discovered this way become our private patients and it is the purpose of this paper to aid in the final differential diagnosis and treatment. While it is impossible to make hearing tests suitable for research without the aid of technical apparatus, a little experience with tests with the voice and tuning forks will suffice the general practitioner. With the help of someone whose hearing is normal, find out how far the spoken voice carries, then the whispered voice, both under the quietest conditions possible. A whisper will carry about 15-18 feet, and low speech about twenty feet. By trying various numbers under the same conditions, it is found that seven, six, four and eight are heard much better than one, two, three, five and nine. A watch may be used to detect higher pitch deafness, but it must be standardized as the voice was above. In either case the hearing is expressed best as a fraction, as 15/20 with the normal distance below the line.

Every physician examining the ears of school children should familiarize himself with the use of tuning forks. With two forks, one for low and one for high tones, the condition of the conduction apparatus and the auditory nerve can be determined. The tests are made in a quiet room without distractions. The fork is struck as even a blow as possible and the handle is pressed over the mastoid bone. The length of time heard is taken in seconds and then the air conduction with the flat of the fork one inch from the external canal is determined. The air conduction should be two or more times the bone conduction, normally. The time for each fork must be determined by the man using it, as technics differ, of course. In unilateral deafness the good ear must be masked by the use of a buzzer or current of air or other loud noise.

The bone conduction is indicative of the condition of the nerve and the air conduction of the condition of the conduction apparatus. The differential diagnosis between the two types of deafness is difficult and always important, especially in making a prediction as to prognosis. The outlook in children is

much better in conduction deafness when gotten early, while the outcome of a nerve type of deafness is harder to predict.

The treatment of hearing difficulties falls into three classifications: 1. Prevention. 2. Specific therapy directed toward improvement in hearing and arrest of the progress of the disease. 3. Rehabilitation and readjustment of the child to prevent handicaps in society.

Under prevention, Fowler, of New York, gave the interns at the New York Eye and Ear Infirmary these precepts: 1. Clean up the sinuses as well as possible. 2. Remove adenoids and tonsils, if septic. 3. Establish ventilation of the middle ear by shrinkage of the orifice of the eustachian tube. 4. Allow swimming but not diving. 5. Prevent or shorten nasal infections. To these I would like to add the conservative management of childhood diseases to avoid complications. It is along these lines that you are so well able to advise the parents of the children in your care. Clear up the nose and throat conditions and, if necessary, advise the removal of the tonsils and adenoids. Sometimes palpation of the nasopharynx will reveal adhesions left by the removal of the adenoids, and breaking these will often clear up the hearing. This is an old trick of the osteopaths, and accounts for their success in treating deafness.

In treating a child's cold, ephedrine and allied drugs should be used only in very weak solution and then only during the acute congestive phase. Mild oils are less harmful and more comfortable. Most proprietary preparations are too strong.

In otitis media the drum should be incised at the first sign of pus formation to prevent complications and lessen suffering. After the suppurating ear has

healed the hearing should be tested and treated if necessary. Routine tests should be made after an illness in which the ears have given symptoms.

As regards hearing, the chronically discharging ear is a constant menace, and any ear running after six to eight weeks must be treated as a chronic ear. If they do not clear up under vigorous treatment to the nose and ear, they should be handled surgically.

The third principle of treatment, the rehabilitation of those handicapped, calls for cooperation among physician, parents and teacher. The child should be given a front seat in class and if necessary lip-reading instruction. The attention of the child should be directed away from his handicap as much as possible. The American Society for the Hard of Hearing is a large organization with headquarters in Washington. Its membership consists of those interested in deafness as a handicap and it does a great work. Their publications should be recommended to all our patients who are easily discouraged.

CONCLUSIONS

The prevention of deafness in children is becoming a public health problem which we must meet and recognize. A few of the more common causes of deafness have been discussed and their treatment outlined.

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THE DETERMINATION OF PROLAN EXCRETION DURING THE MENSTRUAL CYCLE.*

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and

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Due to the rhythmical activity of the anterior pituitary during the menstrual cycle, various investigators have found the pituitary gonadotropic hormone (F. S. H.) present in blood and urine for a few days

of the cycle in comparatively large amounts, whereas it is absent the rest of the time. Since this hormone usually appears about the middle of the cycle, it is believed that it may be an indication of the time of ovulation. D'Amour *et al.*² have shown that in some women the urinary prolan excretion occurs regu-

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larly in the middle of the cycle, while in others it is quite irregular and even two peaks may appear—one soon after menstruation, and the other shortly before the next menses. Frank³ has found disturbances in prolan excretion in various endocrine disturbances, it being continuous following castration, and often absent in amenorrhea. Thus, the determination of urinary prolan may serve as an index of the time of ovulation, and of the type of endocrine disorder, as in distinguishing between primary ovarian failure and that ovarian failure secondary to failure of the pituitary.

The most common test for urinary prolan in non-pregnant patients is the Aschheim-Zondek test, where the urine is concentrated and injected into a twenty-one-day-old female rat or mouse in 1 cc. doses or less, three times daily for two days, and the animal killed 100 hours after the first injection. The ovaries are then fixed and sectioned and the degree of stimulation of the ovaries estimated.

There are many objections to this test: the necessity for histological preparation, the difficulty in determining the degree of follicular stimulation, and the number of animals required to determine the number of units present in the urine. Moreover, it is not uncommon for some of the animals to die from the toxic effects of the urine, which we believe is due largely to the K and Na content of the concentrate (unpublished results).

For these reasons, we have evolved the following technic which obviates the above objections. We have used the uterine weight of the immature rat as an indicator, since Cartland and Nelson¹ have shown it to be more sensitive to small amounts of gonadotropic hormones than the ovarian weight. In order to diminish the toxic effects of the urine, we wished to give no more than two injections a day to allow the animal more time to recover, and to use as dilute a preparation as possible. Consequently, we adopted Heller's method⁴ of dissolving the urine concentrate to be injected in 9 cc. of water, giving two injections per day. The animal is killed the morning of the sixth day. In this way the same amount of concentrate is injected over a period of five days, instead of within two days, as with the Aschheim-Zondek method. We have found that this is far superior so far as survival of the animals is concerned. In the following case, only one specimen of urine proved toxic and then the animal died only shortly before

the end of the test, whereas with the Aschheim-Zondek method so many animals died with even smaller amounts of concentrate, that the method had to be discarded completely.

The subject was a nurse, aged twenty-one years, with a normal menstrual history. The twenty-four-hour specimen of urine was collected every day during a complete menstrual cycle. A few cc. of chloroform were previously added to the collecting bottle. Following addition of the first morning specimen, the urine was acidified to litmus with acetic acid if necessary, and filtered. Four parts ethyl alcohol were added, and it was placed in the refrigerator at 5° C. overnight. The supernatant fluid was decanted and the precipitate collected by centrifuging. It was then washed twice with a total of 200 cc. of ether, mixing for five minutes, and dried. The precipitate was then placed in a covered Petri dish and placed at 5° C. until the rats were available. The day before injection, one-fourth of the precipitate by weight was dissolved in 9 cc. of sterile distilled water, centrifuged, and replaced at 5° C. The next evening the supernatant fluid was poured off and measured, 1 cc. was injected subcutaneously into a twenty-one-day-old female rat, and injections made twice daily until the animal was killed the morning of the sixth day. As usually occurred, the precipitate would absorb some of the 9 cc., so that a little more water had to be added to the precipitate, stirred, and centrifuged, so that a total of 9 cc. could be obtained.

The remaining three-fourths of the precipitate was used for the Aschheim-Zondek method, but this had to be given up due to the toxicity.

The morning of the sixth day, about 108 hours after the first injection, the rats were killed with ether, the uterus stripped clean of fascia, and sectioned at the cervix. A slit was made in the uterus and the fluid contents, if any, pressed out between filter paper moistened lightly with saline. The uterus was then dropped into a small covered weighing bottle and weighed. When the uterus showed distinct stimulation, the ovaries, free of tubes, were also weighed, to determine if ovarian stimulation had also occurred. If the uterine weight is not increased, we do not believe it necessary to take the trouble of dissecting and weighing the ovaries, since the uterine weight is far more sensitive. The results are shown in Figure 1. To our surprise, the peak of prolan excretion occurred rather late in the cycle, but D'Amour

*et al.*² have also found similar irregularities. Our subject experienced no intermenstrual pain. The blank period for the twentieth and twenty-first days prior to menstruation is due to the fact that all of the precipitate was used for the Aschheim-Zondek test, but no ovarian or uterine stimulation was observed. Plotting the organ weights per gram of rat rather than directly did not have any appreciable effect on the curve, so that we decided it is probably unnecessary.

One could expect the estrogen excretion to be at its peak at this time or shortly thereafter, which might affect uterine weight directly, but the definite increase of the ovarian weight on the seventh day convinces us that prolans are at least concerned, and the definite lack of uterine stimulation during the rest of the cycle makes us feel sure that no previous peak could have been missed. Due to an oversight, the ovarian weight of the rat on the eighth day was not obtained. This rat, as well as a repeat rat, died shortly before completion of the test, so that the recorded uterine weight may be less than it should have been. In no case was the vagina open. The Aschheim-Zondek tests run during the first half of the cycle were all negative, where the animals lived.

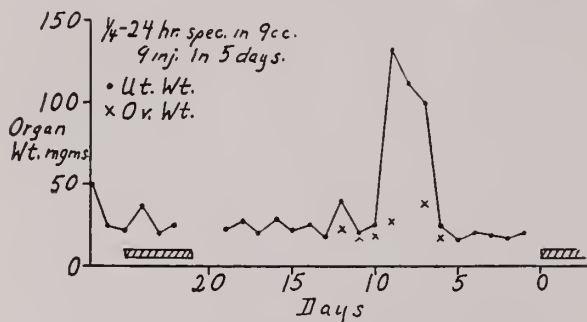


Fig. 1.—The effect on uterine and ovarian weights of injecting a concentrate of one-fourth the twenty-four-hour specimen of urine from a normal female into immature rats. Definite prolans excretion is evident on the ninth, eighth, and seventh days prior to menstruation. The menses are indicated by the striped bars.

One disadvantage of using the rat uterus as an indicator is that any estrogen not removed by ether, and dissolving in the added water together with the prolans, will increase the uterine weight directly, to produce a false positive. Consequently, it is neces-

sary to weigh the ovaries where the uterus is definitely stimulated, since if the increase in the uterine weight is due to estrogens alone, the ovarian weight will not be increased over the controls (about 15 mg.). Administration of estrogen simultaneously with the follicle stimulating hormone may produce ovulation and luteinization of the ovaries.⁵ Such an effect did not occur in our experiment. This procedure will have to be followed until it is shown definitely that estrogens are not carried over by this method in sufficient amounts to affect the uterine weight.

For clinical purposes, we suggest the use of half of the first morning specimen, rather than one-fourth of the twenty-four-hour specimen, in order to save alcohol and time.

The approximate cost of this method may be calculated as follows: Half the morning specimen of urine treated with four parts of alcohol, approximately 30 liters----- = \$ 5.00 plus tax
One rat for each day of the

| | | |
|----------------------|---|-------|
| cycle, @ 50c----- | = | 15.00 |
| Ether—6 liters ----- | = | 5.00 |

| | | |
|-------------|---|---------|
| Total ----- | = | \$25.00 |
|-------------|---|---------|

Consequently, the actual cost, irrespective of time and overhead, will be more than \$25, so that it does not appear that such a test can be used often.

SUMMARY

A procedure using the weights of the rat uterus and ovaries is suggested for the determination of the prolans excretion of non-pregnant females. Results during a menstrual cycle of a normal female are given.

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REPORT OF A CASE OF TYPE III PNEUMOCOCCUS MENINGITIS WITH RECOVERY, IN WHICH SULFANILAMIDE WAS USED.

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and

DAN O. NICHOLS, M.D.,

Charlottesville, Virginia.

As evidenced by the scarcity of recoveries reported, meningitis due to type III pneumococcus is a highly fatal disease. The majority of instances of infection with this organism originate from the auditory apparatus;¹ less frequently from the paranasal sinuses, cavernous sinus, or post-operatively. It may also occur in blood stream infections. In the absence of any specific medication, treatment has been largely symptomatic. With the recent advent of sulfanilamide a number of types of pneumococcus infection have been treated with varying results. The purpose of this paper is to report a case of type III pneumococcus meningitis with recovery, in which sulfanilamide was the outstanding therapeutic agent used.

CASE REPORT

The patient, a sixty-year-old white female, was admitted to the Martha Jefferson Hospital March 12, 1938, in an acutely ill and irrational condition.

The family and past histories were irrelevant.

The present illness had begun two days before with slight pain in the left ear. The patient had continued to perform her usual duties until the day of admission, when she began to complain of a severe diffuse headache. She remained in bed, took very little nourishment, became feverish and delirious, and vomited. She was seen in her home by one of us on the afternoon of admission. A tentative diagnosis of meningitis was made. Immediate hospitalization was advised.

General physical examination revealed the following abnormal findings: an acutely ill, delirious woman; hot and dry skin; strained facial expression; injected sclerae; slight sclerosis of the retinal arteries; a red, dull, slightly bulging left ear drum; slightly pale mucous membranes; parched lips; definite stiffness of the neck and spine; B. P. 180/84; slight generalized tenderness of the abdomen, and bilaterally positive Kernig sign.

(1) Symposium on Meningitis: Pathways of Infection in Suppurative Meningitis, A. A. Eggston. *Annals of Otol., Rhin. and Laryn.*, Vol. 43, September, 1934.

Routine laboratory studies were as follows: Hgb. 75 per cent Sahli, R. B. C. 3,690,000; W. B. C. 19,000; blood Kahn negative, blood culture negative. Urine obtained by catheter showed albumen 2+ and 20-25 R. B. C./hpf (trauma?). (hpf = high power field.)

On admission the temperature was 104 degrees (rectal), pulse 130, and respiration 30. Immediate lumbar puncture showed the spinal fluid to be under increased pressure, and very cloudy and yellow. A count showed innumerable pus cells. Gram stain of the sediment showed numerous Gram positive diplococci in pairs and chains. Typing of the spinal fluid by the Neufeld method was reported positive for type III pneumococcus. Spinal fluid culture also showed type III.

The patient was given 1,500 cc. of 5 per cent glucose intravenously. A nasoduodenal tube was inserted and fluids forced. Intensive administration of sulfanilamide and sodium bicarbonate by mouth was started.

The night of admission a left myringotomy was done and pus under pressure found. This middle ear infection was thought to be the portal of entry for the organism.

By midday, the day after admission, the patient had received 160 grains each of sulfanilamide and sodium bicarbonate. The blood sulfanilamide was 7 mgm./100 cc. and spinal fluid sulfanilamide 8 mgm./100 cc. Sulfanilamide and sodium bicarbonate were continued in twenty grain doses each every four hours and later every three hours. Drainage of the spinal fluid was done approximately every six to eight hours during the first week.

The patient continued ill with high fever, restlessness, cyanosis, incontinence of urine and feces and was irrational. She was given blood transfusions of 300 cc., 500 cc. and 250 cc. of citrated blood on the second, third and fifth hospital days, respectively. An indwelling catheter was maintained.

On March 14, 16, and 17, Gram stains and cul-

tures of the spinal fluid were negative for any organisms

On March 15, the Hgb, was 90 per cent Sahli, R. B. C. 5,190,000; W. B. C. 18,000. A spinal fluid cell count was 2,600. Carbon dioxide combining power was 48.1 volume per cent.

By March 16, the patient had improved and became rational for the first time.

On March 18, six days after admission, the highest rectal temperature was 101 degrees. A spinal fluid cell count was 1,200; W. B. C. 16,000; blood sulphanilamide 11.4 mgm./100 cc. and spinal fluid sulphanilamide 10.8 mgm./100 cc.

Improvement was progressive. The temperature gradually returned to normal by the tenth day, after which it was never recorded over 99.6 degrees during the remainder of her stay in the hospital. The left ear drum returned to a normal appearance. Tube feeding was discontinued on March 28. As recovery continued, lumbar punctures were done at less frequent intervals. The spinal fluid gradually became clear. The cell count fell steadily; on the last punc-

ture, April 1, only six cells were found. The dosage of sulphanilamide was decreased gradually and discontinued the last week. Cyanosis disappeared. During convalescence there were no complaints except weakness. For several days before discharge the patient was allowed to sit up in a chair for short periods without ill effects. On April 9, the Hgb. was 82 per cent Sahli, R. B. C. 4,300,000; W. B. C. 8,200, with a normal differential count. Urine obtained by catheter was normal.

The patient was discharged April 10, 1938, thirty days after admission, apparently having made an uneventful recovery.*

SUMMARY

A sixty-year-old woman with type III pneumococcus meningitis probably originating from otitis media is reported. Treatment consisted of draining the focus of infection, repeated drainage of the spinal fluid, sulphanilamide and blood transfusions. The patient recovered.

*See accompanying table.

TABLE OF PERTINENT LABORATORY STUDIES

| <i>Hospital day</i> | <i>Hgb, % Sahli</i> | <i>Rbc count in millions</i> | <i>Wbc count</i> | <i>Spinal fluid cell count</i> | <i>Blood sulphanilamide in mgm/100 cc.</i> | <i>Spinal fluid sulphanilamide in mgm/100 cc.</i> | <i>Blood CO₂ combining power in volumes %</i> |
|---------------------|---------------------|------------------------------|------------------|--------------------------------|--|---|--|
| 1 | 75 | 3.69 | 19,000 | 3,500 | -- | -- | -- |
| 2 | -- | -- | ----- | --- | 7 | 8 | -- |
| 3 | 78 | 4.89 | 18,800 | --- | 6.9 | 6.4 | -- |
| 4 | 90 | 5.19 | 18,000 | 2,600 | -- | -- | 48.1 |
| 5 | -- | -- | ----- | 2,400 | -- | 8 | -- |
| 6 | -- | -- | ----- | 1,800 | -- | -- | -- |
| 7 | -- | -- | 16,000 | 1,200 | 11.4 | 10.8 | -- |
| 8 | -- | -- | ----- | --- | -- | -- | 42.8 |
| 9 | -- | -- | ----- | 282 | -- | -- | -- |
| 10 | -- | -- | ----- | --- | -- | -- | 44.8 |
| 11 | -- | -- | ----- | 78 | -- | -- | -- |
| 12 | -- | -- | ----- | --- | -- | -- | -- |
| 13 | 85 | 4.48 | 13,000 | 23 | 8 | 6.1 | -- |
| 14 | -- | -- | ----- | 13 | -- | -- | -- |
| 15 | -- | -- | 12,600 | --- | -- | -- | -- |
| 16 | -- | -- | ----- | 11 | -- | -- | -- |
| 17 | -- | -- | 10,000 | 9 | -- | -- | -- |
| 18 | -- | -- | ----- | --- | -- | -- | -- |
| 19 | -- | -- | ----- | --- | -- | -- | -- |
| 20 | -- | -- | ----- | --- | -- | -- | -- |
| 21 | -- | -- | ----- | 6 | -- | -- | -- |
| 22 | -- | -- | 9,800 | --- | -- | -- | -- |
| 23 | -- | -- | ----- | --- | -- | -- | -- |
| 24 | -- | -- | ----- | --- | -- | -- | -- |
| 25 | -- | -- | ----- | --- | -- | -- | -- |
| 26 | -- | -- | ----- | --- | -- | -- | -- |
| 27 | -- | -- | ----- | --- | -- | -- | -- |
| 28 | -- | -- | ----- | --- | -- | -- | -- |
| 29 | 82 | 4.30 | 8,200 | --- | -- | -- | -- |
| 30 | -- | -- | ----- | --- | -- | -- | -- |

HEMIPLEGIA COMPLICATING LABOR.*

MIKE HINES, M.D.,
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Hemiplegia is a rare complication of labor but it can and does occur; just why it is not seen more often is a very interesting medical question. In individuals past middle life hemiplegia resulting from cerebral hemorrhage or thrombosis is a frequent cause of death or crippling disability. The case records of any general practitioner contain a number of such serious vascular accidents. Available medical literature also indicates that during eclamptic seizures, either pre- or post-partum, hemiplegia may occasionally be encountered. Nor is it surprising that such vascular accidents do occur in a condition characterized usually by marked arterial hypertension with an added load on the blood vessels that accompanies the prolonged convulsions.

The occurrence of a one-sided motor paralysis in a patient, without eclampsia, while being observed during the second stage of labor, came under the writer's observation recently. It was the first such experience in ten years' practice and approximately 1000 deliveries. This led to an inquiry as to the frequency of its incidents. The available textbooks on obstetrics fail to record hemiplegia as one of the complications of labor in the absence of eclampsia. Furthermore, a careful search through numbers of the Cumulative Index covering a period of years also indicates that the medical literature reviewed by the publishers in this and other countries was equally lacking in reference to the condition encountered. It is not infrequent that as pregnancy progresses the patient's blood pressure shows a tendency to become lower, especially during the first months, than was the case prior to pregnancy. Yet all of us engaged in the practice of obstetrics too often observe patients in the last months of the pregnant state with varying degrees of increasing arterial tension. Most of this group, however, if given proper pre-natal care, enter labor and are delivered without serious complications.

It is interesting, therefore, to theorize as to why such individuals do not more frequently sustain cerebral vascular accidents. One would think that the tremendous effort to which the average woman in

labor is subjected would aggravate sufficiently the pre-existing arterial hypertension and result frequently in the rupture of an intra-cranial vessel.

The following explanations of the infrequency of such happenings suggest themselves, though others not considered may well be more appropriate:

1. No doubt, the kind hand of Providence, so constructed the circulatory system of the female, that she may safely withstand the extra strain of labor, because, even in the fifth and sixth decades, the ratio of hemiplegias show a great predominance in males.

2. Perhaps during pregnancy there is some unknown protective hormone thrown out into the blood stream of the mother, to strengthen the walls of her vessels and carry her safely through the ordeal of labor.

3. Most women fortunately are through the child-bearing period by the time they are forty, and the arterial walls usually show but slight change before the fifth decade of life; therefore, they would not be so prone to cerebral hemorrhage.

The actual predisposing and exciting causes of a ruptured vessel are not always evident. The attack may be sudden—without any preliminary symptoms. In other instances, straining efforts, or over-action of the heart, or strong emotion may cause a rupture, but high blood pressure, obesity and arterial disease in persons over forty are the main predisposing factors.

The treatment of hemiplegia complicating labor is practically the same as hemiplegia occurring at any other time, except from the standpoint of delivery; this should be completed as early as possible, avoiding further straining efforts on the mother. If the baby's head has advanced sufficiently, it is safer to apply low forceps and complete the delivery, rather than take chances on further bleeding of a ruptured cerebral vessel. The treatment during the period of coma is an expectant one. The patient should be carefully watched; she should be encouraged to drink, should be kept clean and every precaution taken to prevent bedsores. The lungs should be examined frequently, as there is danger of bronchopneumonia. After the patient comes out of the coma, she should

*Read before the Southwestern Virginia Medical Society at Abingdon, Va., April 14, 1938.

be given a back-rest, because there is no advantage in remaining in the recumbent position, as this only increases the intracranial pressure and predisposes to bronchopneumonia and bedsores.

When the hemiplegia is well established, re-education and massage constitute important forms of treatment. Massage prevents the occurrence of excessive muscular atrophy and also serves to prevent arthritis, which may go on to painful ankylosis and contracture. Re-education is much more useful than has heretofore been considered. Electrotherapy certainly has its place and is a great aid to the morale of the patient. Beyond these general indications, each patient with hemiplegia requires individual and special treatment.

Iodides may be given when arteriosclerosis is the cause. Arsenic, bismuth and mercury are indicated in syphilitics. Startling results should not be expected, however, for the lesions are generally permanent. The treatment of tumors and abscesses are, of course, surgical. Some have advocated surgical intervention during hemiplegic coma for the purpose of removing the clot and lowering the blood pressure; the results of such procedures have not, up to the present time, justified their recommendations.

CASE REPORT

Mrs. E. W. was seen the first time September 2, 1937, about 11 P. M. at home. She was a white female, forty-two years old and weighed approximately 160 pounds. She had been in labor four hours. A mid-wife, who had been called in some time earlier, told her she was mistaken, that she was not pregnant. The patient told me this was her seventeenth child, and I was convinced before I even examined her that she knew when she was having labor pains.

She had never had pre-natal care and this was the first time a doctor had been called for her during childbirth. She was having labor pains at five-minute intervals, and complained of severe headache and dizziness, which had bothered her for several months.

She also stated that she had frequently had sharp cutting pains around her heart, radiating to the left shoulder and down the arm. These were so severe at times that she would have to stop work.

There had been some swelling of her feet and ankles during her last pregnancy. Blood pressure

was 240/160. The heart was enlarged to the left. There was a blowing systolic murmur and early diastolic murmur heard at the apex; rhythm normal.

As the interval between pains shortened, their intensity increased and I was wondering what would be the outcome—when suddenly there was a loss of consciousness with complete relaxation of the extremities. She could not be aroused; her face became flushed, lips cyanotic, pupils dilated and inactive, lips sputtered, breathing was short and choppy, and there was a Cheyne-Stokes' rhythm. Her pulse was full but slow. When her hands were lifted, the left fell "dead". Her head was rotated towards the left side. All the reflexes were abolished. The left leg was flaccid and dropped instantly when lifted.

Twenty minutes after becoming unconscious, with but slight uterine contractions she gave birth to a six-pound-healthy-living baby—a spontaneous delivery. It was estimated that between 800-1000 cc. of blood was lost following the third stage of labor.

No pituitrin or ergot was administered, as it was thought wise to allow her to bleed. Except for clean linens on the bed and placing an ice-cap on the right side of her head, she was not disturbed further. Blood pressure checked two hours later was 230/150. She was seen again in twelve hours. Pressure then was 235/150. The patient was still unconscious. Two days after delivery she was brought to the hospital where she remained seventeen days. While in the hospital she was placed on a restricted diet, and was given fluids for the first two days by proctoclysis. She was voiding involuntarily. On the fourth day, she was able to take fluids by mouth. The fluid intake was 90 ozs. while the output was 52 ozs. During the next ten days her fluids were somewhat limited, but at the end of that time she had a fairly normal ratio, her fluid intake being 48 ozs. and output 22 ozs. She was rational. Blood pressure was 176/128. Highest temperature recorded while in the hospital was 99.4.

Blood examination showed: Hemoglobin 82 per cent; red blood cells—3,800,000 per cm.; white blood cells—10,600 per cm.; differential count—P. 71 per cent, Lym. 29 per cent; blood urea—77 mg.; blood urea N—35 mg.; blood sugar—106 mg.; proteins—7.93; chlorides—6.15. Kahn reported negative.

Urine analysis (Catheterized specimen) showed a heavy trace of albumin and 12-15 pus cells per high power field.

SUMMARY

1. Hemiplegia does occur during labor but how may we best explain its infrequency?

2. Obesity, hypertension and arterial changes are the main predisposing as well as causative factors.

3. Treatment of hemiplegia complicating labor is the same as hemiplegia occurring at other times, except the labor must be completed.

Miscellaneous

Doctor W. R. Cushing, Christian Gentleman, And Physician Of The Old School.

Uncle Bent was standing on the corner of the street, leaning against a telephone pole, when I drove up.

He was an old darky of some four-score years, to judge from his rather thin grey beard and hair, and his clothes and shoes were not of late purchase. His shirt, though, was clean, and he was wearing a black string tie, tied in a single loop and hanging loose.

At a glance, I saw that he was in sorrow or trouble, and looking around I noticed that the streets of the town were almost deserted, and the stores were all closed.

I was not surprised at this, for I had driven up to Dublin to join a host of others in paying respect to the memory of our old Friend, Doctor W. R. Cushing, who had passed on to other realms.

Well, Uncle, I said, you seem to be in trouble. What is wrong, can I help you?

The old darky gave me a quick glance from under his heavy eyebrows, and seeing that I was not making fun of him, replied, "I *is* in trouble, and trouble 'nough too. You see dat chu'ch steepul over dar on de hill? Well, all de town, white and colored, is over dar payin' de las' rites, and den dey'll put him away after dat, but I jes' couldn' go. I jes' don' b'lieve I could stand it, 'cause he wuz jes' de bes' man I ever knowed and wuz de bes' frien' anybody ever had. I been workin' wif 'im offen on ever since he cum to dis town over fifty years ago, and I oughta know."

His earnestness fascinated me, and wanting to draw him out further, I said, Well, Uncle, what is your name? "Bentley is my name, suh, but eve'y-body mos' jes' calls me Uncle Bent, fo' short.

"You see, I belonged to de Bentleys,—his wife's people, an' I been wid 'im ever sence 'im an' Miss Cynthy wuz married, jes' fifty year ago today, an' now he done gone to 'er."

Well, Uncle Bent, I said, I am glad to hear you say such nice things about the doctor, for I had heard that he was a very mean man, that he would not go to see anybody unless they paid him in advance, and that he would let the poor whites and colored people suffer and even die for lack of attention. That he'd take the flour out of the barrel and rob the smoke-house in order to get pay for his work, and that he drank all the time.

Uncle Bent seemed stupefied for a minute, and then he looked up at me with tears in his eyes and his voice trembled as he said: "I'd jes' like to know who tole you all o' dat mess o' lies 'bout de Doctor, 'cause deys' lies, every one."

"Why, I've rid wif 'im day an' night, day an' night for years and years an' years, an' I ain't never knowed 'im to turn down nobody white or black, at no time day or night, and I've knowed 'im to ride two hosses almost to death in one week, and when I told 'im he was working himself and his hosses to death, he'd jes' laff and say, 'Well, Bent, we've all got to go some day, an' we can't let the sick suffer'.

"An' many a time I've had him say to me: 'Bent, get a sack of flour an' put it in de buggy, 'cause I don' expect that woman over on de mountain is got much to eat fo' dose brats, an' now annudder one is comin', an' you better take de axe along an' cut her up some wood'.

"An', so while he wuz waitin' on de woman, I'd cut up 'nough of wood to las' for a few days.

"No, suh, I ain't never seed nobody like 'im in my life,—jes' waitin' on de sick day and night, and in all dese years I been wid 'im I ain't never heard him axe nobody fer no money, neither. An' while he had anythin' in his smokehouse, there ain't none o' his folks he 'tended on ever gone hungry, *no suh*, dey ain't."

But Uncle Bent, I said, if he never charged anybody, how did he manage to live?

"Well suh, dey paid him when dey had it, an' when I axed 'im one time 'bout dat same thing, he jes' said, 'Bent, de Lawd'll take care o' dat', and He musta, 'cause he allus had some money in his pockets.

"An' ever sence Miss Cynthy (dat's his wife, we all call her Miss Cynthy), after she gone, der never wuz a day he didn't go by her grave an' put a flower on it, an' ef he didn't have a flower, he'd jus' go by an' pat his han' on 'er tombstone an' bow his head a minit an' den he'd cum back an' git in de buggy, an' from dat till we'd git home we'd never pass a

word between us. He knowed dat I un'erstood 'im.

"As to de likker, he never tetched it an' never mentioned it 'cept always on de night 'fore Christmas he'd han' me a dollar an' say, 'Well, Bent, I know you want a little Christmas,' an' I'd git me some likker for Christmas, but I nebber went 'roun' 'im wid it. I knowed better.

"He was agin likker an' when I say he wuz agin it, I mean *he wuz agin it!*"

"I wish I knowed de man what tole you all dat about 'im. As old as I is, an' as black as I is, I'd jes' give 'im a piece of my mind, 'cause dey's all lies—dat's what dey is, LIES."

Well, Uncle Bent, I said, I'm glad to have heard what you have said about the Doctor, and I believe every word you have said to me to be the truth, and I'm going to tell the one who told me those things just what I think of him, and that I don't believe one word of it.

Uncle Bent's face was wreathed in smiles when I said this, and when I slipped a dollar into his hand, he said (as if he was talking to himself more than to me): "Yas Suh, I'ze gwine spen' dis fo' sum' flowers an' put 'em on his grave, jes' like he done for Miss Cynthy,—*dat's* what I'ze gwiner do."

G. M. MAXWELL, M.D.,
Roanoke, Virginia.

NOTE.—Dr. Cushing died October 5, 1938, in Dublin, Virginia.

Public Health Statistics

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia.

The report of the State Health Department's bureau of communicable diseases, as compiled for the month of October, shows the following cases compared with the same month in 1937.

| | 1938 | 1937 |
|-----------------------------------|------|------|
| Typhoid and Paratyphoid..... | 52 | 49 |
| Diphtheria | 412 | 302 |
| Scarlet Fever | 188 | 210 |
| Measles | 37 | 118 |
| Meningitis | 5 | 13 |
| Poliomyelitis | 10 | 7 |
| Rocky Mountain Spotted Fever..... | 1 | 0 |
| Typhus Fever | 0 | 0 |

INDUSTRIAL HYGIENE BULLETIN ON SILICOSIS IN THE MONUMENT MANUFACTURING INDUSTRY IN VIRGINIA

A report recently has been published covering a survey made by the bureau of industrial hygiene of

80 per cent of the monument manufacturing plants in the State. The study was undertaken to obtain information which would be helpful in assisting the industry in the practical application of methods of dust control and the preservation of the health of the workers. The results of the X-rays on 45 per cent of the workers indicate a lower incidence of silicosis than is reported in similar occupations in Vermont. Moreover, the degree of lung involvement is not excessive.

Excessive dust exposure, however, is reported in certain occupations connected with this industry. Nearly 27 per cent of the workers examined by X-ray showed lung involvement due to breathing dust. The report urges Virginia plants to install necessary control measures to reduce dust concentrations to safe limits.

Copies of this bulletin may be obtained on request from the bureau of industrial hygiene, State Department of Health.

MATERNAL AND CHILD HEALTH CLINIC SERVICE

Beginning with the organization of the first of these clinics two years ago an effort has been made to augment and improve the services available in the maternal and child health clinics.

Through the professional assistance rendered to indigent prenatals, postnatals, infants, and preschool children these clinics not only represent an immediate community health asset but they have been and will continue to be valuable in demonstrating to the public the advantage of adequate medical supervision by emphasizing desirable procedures.

The obstetricians and pediatricians have cooperated whole-heartedly in developing policies associated with the official phases of maternal and child health activities. Moreover, the physicians serving in the clinics have aided definitely in developing and maintaining high standards of technique.

While clinics for indigent mothers and children as yet have not been organized in sufficient numbers in all areas needing this service, seventy-five localities now are receiving direct benefit from this type of work.

ADDITIONAL MEASURES AGAINST DIPHTHERIA INDICATED

There has been a very definite increase in the number of diphtheria cases reported to the Virginia Department of Health for the four months of July, August, September, and October, 1938, over the same period for 1937. This rise in incidence is shown in

the following comparison of the number of cases for these months recorded in 1937 and 1938 by the Department.

| Number of diphtheria cases reported | | |
|-------------------------------------|------|------|
| | 1937 | 1938 |
| July ----- | 40 | 63 |
| August ----- | 71 | 91 |
| September ----- | 134 | 190 |
| October ----- | 302 | 451 |
| <hr/> | | |
| Total (July-October) --- | 547 | 795 |

It can be seen that two hundred and forty-eight more cases have been observed for the present season than were recorded in 1937. This increased prevalence has been somewhat generally distributed throughout the State with several areas exhibiting marked rises in incidence.

At a recent conference called to discuss this situation, which included the Child Welfare Committee of the Medical Society of Virginia, the President of the Virginia Pediatric Society, and members of the Virginia Department of Health in Richmond, a review of the past and present record of the disease in the State was presented. Factors influencing the spread and measures facilitating its control were discussed. A more intensive program designed to reduce the incidence and deaths from diphtheria was considered necessary. Such a program now is being formulated.

Woman's Auxiliary to the Medical Society of Virginia

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Greetings!

I wish it were possible for me to look into the faces of every doctor's wife, those who are members of an auxiliary, and those who are not, and extend these greetings, and urge you to join us whole heartily in the great task and privilege of making Virginia more health conscious! We need you ladies, and our doctors need us.

Would that all doctors might see that ours is an

organization worthy of their esteem and admiration; for as one of our past presidents has rightly said "In no way is the Auxiliary an interfering factor, we stand ready to help, without forcing ourselves or ideas upon any individual, group, or organization."

We are most anxious that those doctors' wives who have not yet organized will let us come and help you to organize, that you may have a keener appreciation for that most noble of all professions, and that you might be more helpful in the health program of our State, not to mention the delightful contact of knowing and loving each other better.

Our last president chose for her slogan—*inspiration, cooperation, and application*. I would that we continue this, but that we add *information*. Inform ourselves on all the various subjects that medicine is trying to solve today, so that we may take our places on all health programs, and be able with intelligence and authority to pass on knowledge that will make for a happier and healthier Virginia.

Someone has said that "The medium of light is the incandescent bulb; the medium of music is the voice or the instrument; the medium of the radio is the microphone, and the medium of a healthful life and a power for the profession is our Auxiliary."

Again greetings, and may the coming year be one of progress and pleasure for us all!

Faithfully yours,

ELLIE COOKE CAMPBELL,
(MRS. HAWES CAMPBELL).

To the Press and Publicity Chairmen:

The chairman of the Press and Publicity Committee of the National Auxiliary has requested me to mail her a summary of news assembled from reports given me by the Press and Publicity chairmen of each local auxiliary. The report of each meeting should contain the following information: Name of auxiliary and its president, date and place of meeting, number present, name of speaker and subject of address, questions discussed which are of national importance and action taken thereon, and special projects of the auxiliary.

In order to be able to give a full report, the responsibility of obtaining an accurate record of each meeting depends upon your help.

I will also appreciate any publicity notices you may be able to give me for the MONTHLY. These notices should reach me by the tenth of each month.

RUBY D. BUTLER.
(MRS. WILBERT E. BUTLER).

Report of The Maternal Welfare Committee of the Medical Society of Virginia

We give below the Report of the Maternal Welfare Committee intended for the recent meeting of the House of Delegates in Danville. This was delayed in being sent in and was not on hand for consideration at that time.

Your Chairman attended a meeting in Washington, D. C., January 17 and 18, 1938—"Better Care for Mothers and Babies"—and listened to many papers, heard many talks, all relating to "Better Care for Mothers and Babies."

At this meeting there were from five to six hundred present, representing all the States and Territories. The "Attendants" were composed, principally of Government Employees, from Mrs. Roosevelt on down to Agriculturists, Social and Economic Heads, Public Health Officers, Nurses, and Obstetricians.

Really, it was an excellent meeting, yet, regardless of the fact that one of the "Speakers" stated that the Government was spending very much more money on "Quadrupeds"—horses, sheep, cows and so forth—than for "Mothers and Babies," really, personally, I feel like getting on the "Band-Wagon" and getting all we can in order to save Mothers' and Babies' lives and to give us "Healthier Mothers" and "Better Babies".

Nevertheless, as Chairman of the Committee, I feel that much more can be done for "Expectant Mothers and Babies." If we cannot get this service for them without the aid of Federal Government, then "let's get more Mothers and Babies, but healthier Mothers and Babies." Some of the speakers at the above mentioned meeting, Dr. Thomas Parran, Dr. Felix Underwood, Dr. Fred L. Adair, Katherine F. Lenroot, Hon. Fiorello LaGuardia, Hon. "Jimmy" Roosevelt—his mother was unable to attend—Josephine Roche, and many, many others, all gave us much information, yet, what shall we do to obtain "results"?

On February 2, 1938, your Committee held a meeting at Richmond, with all members present, also, Dr. Simpson, our President.

As you know, your Committee has tried to concentrate on Maternal Welfare for the past few years. Consequently, we invited Dr. Carson from the State Health

Department to this meeting. He informed us that there were forty-seven prenatal clinics in operation in the State of Virginia at that time, and that several other clinics were in the process of formation.

In view of the foregoing, a resolution was unanimously adopted: "Resolved that it is the sense of this committee that the immediate need of Maternal Welfare in this State is the further development of the prenatal clinics, which project needs additional money, personnel and other things. We recommend that additional appropriation or allocation of funds be made to further this purpose."

As you know, prenatal clinics have been held throughout the State of Virginia for the past several years, under the direction of Drs. Lapham and Shamburger. This Committee feels that the State has been fully covered so recommended that the service of Dr. Shamburger be discontinued during the past summer.

It was also "Resolved that it is the sense of this Committee that successful teaching groups, or post-graduate instruction to Colored Physicians would be beneficial to Obstetrics in Virginia." This resolution was unanimously passed.

Your Chairman had the pleasure and privilege of attending one of the "Prenatal Clinics" as above mentioned, under the supervision of Dr. John Owen, of Turbeville. He was delighted to find an excellent "set-up"; the number of patients he had; the interest his "Co-Workers" were taking in the clinic, and believes we should concentrate the coming year on these prenatal clinics.

However, we know there are many factors to be taken into consideration as to the ultimate success of these, e. g., the Federal Government, State Health Department, Medical Society of Virginia, Public Health Department, Counties, Women's Clubs, Civic Organizations, and so forth. Yet, when we realize that from fifteen to twenty thousand women in the United States die annually in childbirth, and over one hundred thousand babies die within the first few weeks of life, then, why cannot all of the above organizations get together and save a vast majority of these expectant mothers' lives and babies?

T. J. WILLIAMS,
C. J. ANDREWS,
M. P. RUCKER,
A. M. GROSECLOSE,
F. O. PLUNKETT, *Chairman*.

American Association for the Advancement of Science Symposium On Mental Health

The Section on Mental Sciences of the American Association for the Advancement of Science will hold a Symposium on Mental Health at its regular meeting in Richmond, December 28-30. The sessions of the Symposium will be held at the Mosque.

The Symposium will have a morning and afternoon session each day devoted to special topics, and a general evening session on the last day at which the total Symposium proceedings will be reviewed. Unlike the usual scientific meeting, the majority of the communications will not be read at the meetings, but will be published in a series of six brochures, one for each session. These will form the basis of the discussions.

The following is the program for the Symposium:

Wednesday, December 28th

10:00 A. M.

Introductory Remarks on the Aims and Scope of the Symposium.

By Chairman, Section on Medical Sciences, A.A.A.S.: Thomas M. Rivers, M. D., Medical Director, The Hospital of the Rockefeller Institute for Medical Research, New York, N. Y.

Orientation and Methods in Psychiatric Research

I. Discussion, Critique, and Summary of Advance Contributions.

By Session Chairman: Nolan D. C. Lewis, M. D., Director, New York State Psychiatric Institute and Hospital, New York, N. Y.

II. Discussion: The Relationship of Fundamental to Applied Research.

Speaker to be announced.

III. Discussion: The Need and Method for Integrating the Research Forces of the Country.

By William Charles White, M. D., National Institute of Health, Washington, D. C.

IV. General Discussion.

Wednesday, December 28th

2:00 P. M.

Sources of Mental Disease: Their Amelioration and Prevention

I. Discussion, Critique, and Summary of Advance Contributions.

By Session Chairman: Abraham Myerson, M. D., Director, Division of Psychiatric Research, Boston State Hospital, Boston, Mass.

II. Discussion: The Genetic and Biological Bases of Mental Disorders.

By Laurence H. Snyder, Ph. D., Professor of Medical Genetics, Ohio State University College of Medicine, Columbus, Ohio.

III. General Discussion.

Thursday, December 29th

10:00 A. M.

The Economic Aspects of Mental Health

I. Discussion, Critique, and Summary of Advance Contributions

By Session Chairman: Joseph Zubin, Ph. D., Research Assistant in Psychology, New York State Psychiatric Institute and Hospital; and Consulting Statistician, Mental Hospital Survey Committee, New York, N. Y.

II. Discussion: The Relationship of Mental Health to Medical Economics.

By C. Rufus Rorem, Director, Committee on Hospital Service, American Hospital Association, Chicago, Ill.

III. Discussion: The Role of Mental Health and Illness in the General Economy.

Speaker to be announced.

IV. General Discussion.

Thursday, December 29th

2:00 P. M.

Physical and Cultural Environment in Relation to the Conservation of Mental Health

I. Discussion, Critique, and Summary of Advance Contributions

By Session Chairman: Harry Stack Sullivan, M. D., President William Alanson White Psychiatric Foundation, New York, N. Y.

II. Discussion: The Mental Health Aspect of the Communication of Ideas.

By Gregory Zilboorg, M. D., New York, N. Y.

III. Discussion: The Reorientation of Education to the Promotion of Mental Health.

By Lawrence K. Frank, Assistant to the President, Josiah Macy, Jr., Foundation, New York, N. Y.

IV. General Discussion.

Friday, December 30th

10:00 A. M.

Mental Health Administration

- I. Discussion, Critique, and Summary of Advance Contributions.
By Session Chairman: Clarence M. Hincks, M. D., General Director, The National Committee for Mental Hygiene, New York, N. Y.
- II. Discussion: Sociological Aspects of Mental Health Administration.
By Ernest W. Burgess, Ph. D., Professor of Sociology, University of Chicago, Chicago, Ill.
- III. Discussion: Mental Health Administration as a Function of Government.
By Louis Brownlow, Director, Public Administration Clearing House, Chicago, Ill.
- IV. General Discussion.

Friday, December 30th

2:00 P. M.

Professional and Technical Education in Relation to Mental Health

- I. Discussion, Critique, and Summary of Advance Contributions.
By Session Chairman: Franklin G. Ebaugh, M. D., Professor of Psychiatry, University of Colorado, and Director, Division of Psychiatric Education, The National Committee for Mental Hygiene, New York, N. Y.
- II. Discussion: The Rôle of the Internist in Relation to the Mentally Ill.
By Louis Hamman, M. D., Associate Professor of Medicine, Johns Hopkins University, Baltimore, Md.
- III. Discussion: The Rôle of the Legal Profession in Relation to the Mentally Ill.
By John B. Waite, Professor of Law, University of Michigan, Ann Arbor, Mich.
- IV. Discussion: The Minister and Mental Illness.
By Rev. Carroll Wise, Chaplain, Worcester State Hospital, Worcester, Mass.
- V. Discussion: Choosing the Medical Student.
By Frank L. Babbott, M. D., President, Long Island College of Medicine, Brooklyn, N. Y.
- VI. General Discussion.

General Session

Friday, December 30th

8:00 P. M.

Summary and Address.

By C. Macfie Campbell, M. D., Director, Boston Psychopathic Hospital, and Professor of Psychiatry, Harvard University Medical School, Cambridge, Mass.

Truth About Medicine

In addition to the articles previously enumerated, the following have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association:

Mead Johnson & Company

Mead's Cevitamic Acid Tablets.

Parke, Davis & Co.

Diphtheria Toxin Diluted for Schick Test, one 5 cc. vial package.

E. R. Squibb & Sons

Thiamin Chloride-Squibb

Ampule Solution Thiamin Chloride—Squibb, 1 cc.

Tablets Thiamin Chloride—Squibb, 1 mg.

Tablets Thiamin Chloride—Squibb, 5 mg.

New and Nonofficial Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Antimeningococcic Serum, Concentrated and Refined—Gilliland.—An antimeningococcic serum (New and Nonofficial Remedies, 1938, p. 395) which has been refined and so concentrated that 10 cc. is equal to at least 40 cc. of the whole (unrefined) serum. The concentrated serum is equivalent in activities to several times the quantity of unconcentrated serum. The concentrated serum is desirable for intravenous administration and for intraspinal administration where often it is possible to withdraw only small amounts of spinal fluid, as in children. The serum is tested for its precipitin and agglutinin content in mice and is standardized according to the requirements of the National Institute of Health. It is marketed in packages of one 10 cc. double-end vial and in packages of one 10 cc. double-end vial with sterile intraspinal needle and improved gravity injecting outfit. Each package includes a vial of a 1:10 dilution of this serum for determining the sensitivity of the patient. The Gilliland Laboratories, Inc., Marietta, Pa.

Refined Tetanus Toxoid, Alum Precipitated—Squibb.—A preparation of tetanus toxoid, alum precipitated (New and Nonofficial Remedies, 1938, p. 424) marketed in packages of two 1 cc. vials (one immunization treatment). The preparation contains merthiolate 1:10,000. E. R. Squibb & Sons, New York.

Propaganda for Reform

Physical Therapy in the Treatment of Fractures.—In a report authorized for publication by the Council on Physical Therapy Dr. Frank D. Dickson states that the widespread mechanization of industry, the increase in the employment of machinery in agriculture and the tremendous growth in the use of the automobile have completely changed the fracture picture in the United States in recent years. The effectiveness of fracture treatment today cannot be based solely on securing union of the fractured bone or bones, for the rapidity with which the individual is returned to work and the extent to which function is restored must also be taken into consideration.

Today, when we are dealing with more serious and more complicated fractures than in the past, a successful end-result is dependent not only on adequate immediate treatment of the fracture but also on carefully planned and supervised after-care. Physical therapy, properly and intelligently employed, can be of inestimable service in this period of after-care in hastening recovery, but it is equally true that if physical therapy is used as a part of a routine without a true understanding of its purpose it may be detriment rather than a help and even actually prolong the period of convalescence by inculcating in the patient a belief that recovery is to be attained by physical therapy alone and without effort on his part. Broadly speaking, there are four basic forms of physical therapy which may be employed in the treatment of fractures to accomplish the purposes catalogued; they are heat, massage, exercise and muscle stimulation. Used intelligently in the post-reduction period physical therapy will reduce scar tissue, infiltration of muscles, tendons and joints, maintain a satisfactory state of the circulatory apparatus and greatly reduce the period of after-treatment. Properly employed in the after-treatment it will help the patient to do his part, which is building up that voluntary active use of the impaired extremity which alone can restore function, hasten his recovery and complete the cure. (*J. A. M. A.*, September 10, 1938, p. 1016.)

Book Announcements

Men Past Forty. By A. F. NIEMOELLER, A.B., M.A., B. S., Author of *American Encyclopedia of Sex, Etc.* With a Foreword by WINFIELD SCOTT PUGH, B.S., M.D. Harvest House. New York. 1938. 12mo of 154 pages. Cloth. Price, \$2.00.

"Men Past Forty", by A. F. Niemoeller, is not only a book to be read after forty but one from which men under forty may find much help in that the fine advice plainly and simply given may warn those approaching this age against misconception, advertisements and use of agents in the quackery world.

It is the strongest, single volume on impotence and the prostate gland that the reviewer has yet seen. Were it the opinion of the author alone—though he is qualified to discuss the matter with authority—it might lack the greater force. However, his review of and attention to the opinions and work of others makes the book invaluable and convincing.

It distinctly discourages self medication and the use of any agent not given by or recommended by the attending physician.

The peer of any chapter of the book is that on "Change of Life In The Male". The chapter deals with a subject about which little has been written and yet one that is real and vital in the male life—a

change that should be recognized so that he who is slipping slowly into the days of his impotence may do so with psychological balance.

It is a great book and should find a wide sphere of usefulness.

R. W. MILLER.

Human Pathology. A Textbook. By HOWARD T. KARSNER, M. D., Professor of Pathology, Western Reserve University, Cleveland, Ohio. With an Introduction by SIMON FLEXNER, M. D. 18 Illustrations in color and 443 black and white. Fifth Edition, Revised. Philadelphia and London. J. B. Lippincott Company. 1938. Octavo of xii-1013 pages. Cloth. Price, \$10.00.

Karsner's Textbook on Human Pathology is too well known to be in need of further recommendation. Having read the fifth and much revised edition, I am impressed with the conciseness with which the material is presented. The framework is the traditional one, the subject being divided into general and special pathology. The latter deals with diseases according to the organs involved. This "classical" structure certainly makes it easier for students and postgraduates to refer to specific lesions for which they consult the book. The author has very successfully attempted to avoid too much teleological interpretations and has confined himself as much as possible to the mere facts. In most subjects the latest investigations are presented. In my opinion some chapters are badly in need of revision, for instance, the chapter on miliary tuberculosis, jaundice, Weil's disease and several others. This qualification, however, does not affect the value of this book as a whole.

PAUL KIMMELSTIEL.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

- Allport, G. W.—*Personality.*
- American Public Health Association—*Standard methods of milk analysis.*
- American Public Health Association—*Standard methods of water analysis.*
- Association for Research in Nervous and Mental Disease—*The localization of function in the cerebral cortex.*
- Bauer, W. W.—*Health, hygiene and hooley.*
- Beck, R. C.—*Laboratory manual of hematologic technic.*
- Water pollution research. *Estuary of the River Mersey.*
- West, G.—*Charles Darwin.*
- Why we see like human beings.*
- Williams & Spies—*Vitamin B₁ and its use in medicine.*
- Wilson, P. D.—*Experience in the management of fractures and dislocations.*
- Winternitz, M. C.—*The biology of arteriosclerosis.*

Virginia Medical Monthly

Founded by LONDON B. EDWARDS, M. D., April, 1874
Owned by MEDICAL SOCIETY OF VIRGINIA since November, 1919
WYNDHAM B. BLANTON, M. D., *Editor*
AGNES V. EDWARDS, Richmond, *Business Manager*

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All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Monthly, 1200 East Clay Street, Richmond, Va.

This journal is not responsible for the opinions and statements of its contributors.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Subscription Price: \$2.00 per annum in advance. Single Copies 25c.

VOLUME 65

DECEMBER, 1938

No. 12

Editorial

The A.A.A.S.

When the American Association for the Advancement of Science meets in Richmond the latter part of next month, the Section on Medical Sciences will give itself over to an elaborate program on Mental Health. The project is planned in the form of a symposium lasting three days in which some seventy-odd contributions will be divided among six sectional sessions. Most of these contributions will not be read but, in the form of six previously published brochures, will serve simply as the basis for study. It is thought that in this way time will best be conserved for discussion and for debate. The first day will be devoted to a critical survey of certain well recognized problems in the field of psychiatry and related specialties; the second day will be given over to an attempt to appraise the scope of the problem from a statistical point of view; the third day's discussions will centre about the practical aspects of mental disease, public policy and problems of organization. This is the first time Mental Health has been a major consideration before the A.A.A.S. It is hoped that results of the highest scientific and practical value will accrue from this important meeting.

Life to the Rescue.

About forty years ago there was a wave of anti-vivisection activity in this country which culminated

in a notable fight in Congress. The provisions of Senate Bill 1063 greatly alarmed the medical profession of 1900 and the giants of that day took up their cudgels and vigorously attacked the sentimentality and misrepresentation of the advocates of legal restriction of animal experimentation. Foremost among the warriors was the late William Henry Welch and one may read in his collected works the convincing arguments he offered before the Senate Committee to defeat the workers of this iniquity against science.

We had thought the anti-vivisection chapter closed. We had thought that with the triumphs of insulin, pneumococcus serum, diphtheria serum and liver extracts, the necessity for the use of animals in scientific experiment had been for all time demonstrated. Such apparently is not the case, for as this JOURNAL goes to press, in the State of California, an Act known as the State Humane Pound Law has been placed upon the November 8 Ballot, having obtained no less than 250,000 signatures. An ambiguously worded Act, it is said to be designed to outlaw animal experimentation by making it impossible for laboratories to secure animals except through breeding, an obviously financially prohibitive method.

Because of this development, in one of its October issues, the magazine *Life* presented a unique pictorial argument in favor of vivisection. In so doing it reversed a policy for which its predecessor in name, the

old *Life*, had violently crusaded years ago, using cartoons depicting "diabolical" scientists performing "orgies of cruelty."

Life showed first two leading anti-vivisectionists, the one-time ace dancer Irene Castle McLaughlin and the one-time slender movie actress Marion Davies, her *particeps criminis*, tricked out—some-what ironically—in plumes and furs. It balances their pulchritude against six less beauteous pictures of a battery of men from the top ranks of medicine, education, religion and science, placed above their statements in favor of vivisection. It shows pictures of giant respirators perfected at a cost of twenty-four cat lives, keeping life in appealing little human victims of infantile paralysis. It shows medical students operating upon dogs with the same care as to anesthesia, sterility and technique as would be used with human beings. It finally gives the pictorial contrast of a contented horse having two gallons of diphtheria antitoxin taken by a sterile rubber tube from its jugular vein, and of a calm and angelic child receiving a fraction of this antitoxin to protect its life from diphtheria.

Under ordinary circumstances such pictures would be interesting and informing. Today their publication has the added virtue of timeliness in a fight against ignorance.

Fortune Takes a Hand.

In one of those admittedly "exhaustive" articles, last month's *Fortune* scrutinized the American Medical Association, sketched briefly its more recent history, put an evaluation on its editor, analyzed its personnel, exposed its ledger books, took issue with its social philosophy and prognosticated its ultimate downfall. The article ended with an attempt to forecast the future of medicine, prophesying a trend of liberalization which would eventuate in one of several compromises. One gathers that *Fortune* favors sickness insurance and sees no reason why the private practitioner of the future may not take on the added responsibilities of insurance doctor. *Fortune* thinks the future doctors of this country in this dual capacity will effectively straddle the question of socialized medicine. Should the day come when such is the case there will be no more charity practice—even the swell Park Avenue M.D., who now spends his mornings visiting ward patients without remuneration and his afternoons ministering to the medical needs of his paying clientele, will then be

rewarded for A.M. as well as P.M. service, and even such a one perhaps will not despise the shekels that come his way from the coffers of his rich Uncle Sam.

A Promising Pneumonia Vaccine.

Pneumonia is still the third ranking cause of death in the United States of America and the determined attack upon it which was launched several years ago must still go on. It has not been long since Alexander Lambert made what appeared to be extravagant claims concerning the effectiveness of vaccine in pneumonia treatment. During the World War Cecil vaccinated a large number of soldiers against pneumonia and appeared to show the protective value of such a measure among masses of exposed individuals. Now again medical interest centers in a pneumococcus vaccine. The United States Public Health Service has just released the results of Dr. Lloyd D. Felton's new pneumococcus vaccine. It appears to be a carbohydrate derivative which contains all the immunizing qualities of the pneumococcus and is effective both in human beings and in mice. It produces no reaction and "a single injection containing two milligrams of this antigen stimulates as much antibody as multiple injections of the usual pneumococcus vaccine." A high degree of individual variation in reaction was noted, however, and this phenomenon suggests variations in individual susceptibility to pneumonia. The vaccine was tested among 70,000 C.C.C. workers on the East and West Coast during the winter of 1936-37 with results that are highly encouraging. In the New England camps pneumonia was nearly twice as frequent in the uninoculated as in the inoculated. In the West Coast the uninoculated developed pneumonia nine times as frequently as did the inoculated.

If such a vaccine can be perfected and if the preliminary reports of the success of vaccine with virus against the common cold can be confirmed, we will possess two long desired prophylactic measures against the ravages of pneumonia.

Another Opportunity to Lower the Tuberculosis Death Rate.

Once again the symbol of man's conquering fight against tuberculosis—the Christmas Seal—is offered for sale by the Virginia Tuberculosis Association, an organization that reaches into each of Virginia's one hundred counties and into nineteen of her cities.

Tuberculosis is a killer of young people. Its largest toll is taken from the ages of fifteen to forty-five. Deaths occurring in Virginia last year in this age group numbered 1,024 out of a total of 1,787 deaths from all forms of tuberculosis. The peak in the deaths in the United States comes among males between the ages of thirty-five and fifty and among females between the ages of twenty and thirty-five.

The latest figures of the Census Bureau show that Virginia still ranks near the top among the States in tuberculosis mortality. Only the health resort

states and Tennessee, Maryland, Louisiana and Kentucky have a higher rate.

Last year \$101,585 was realized by the sale of Christmas Seals in Virginia. It gave physicians of the state sanatorium treatment for their indigent patients, provision for better home care of the tuberculous, X-rays to aid them in diagnosis and pneumothorax treatments for discharged sanatorium cases, and they will support it this year by word and gift so that even more extensive campaigns of education, prevention and cure can be planned.

President's Message

The crowded agenda at the last midwinter meeting of the Council prevented careful consideration of several very important matters. This year we shall ask each committee, which may wish to bring matters before the meeting, to send its report to our secretary some two weeks beforehand. Copies will be made and mailed to members of the Council so that they may dispose of important matters with considered judgment.

Your cooperation is urged for the completion, as soon as possible, of the survey of medical needs, recommended by our Economics Committee. It is our hope that we shall have completed a comprehensive survey of the medical needs of Virginia before our Society meets again.

Special Committees.

The reappointment of the majority of the present members of the Special Committees is an expression of our appreciation of their ability and interest. The worth-while work of our Society is done by these committees and for them we ask your wholehearted support.

The following committees are appointed:

ADVISORY BOARD TO WOMAN'S AUXILIARY

Dr. P. St. L. Moncure, *Chairman*, Norfolk.
Dr. James B. Stone, Richmond.
Dr. Hawes Campbell, Sr., Venter.

CHILD WELFARE

Dr. F. D. Wilson, *Chairman*, Norfolk.
Dr. James B. Stone, Richmond.
Dr. Edgar A. Harper, Lynchburg.
Dr. C. E. Conrad, Harrisonburg.
Dr. James N. Williams, Richmond.
Dr. W. B. McIlwaine, Petersburg.
Dr. R. D. Bates, Newtown.

Dr. J. M. Bishop, Roanoke.

Dr. L. T. Royster, University.

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Dr. M. P. Rucker, *Chairman*, Richmond.

Dr. C. J. Andrews, Norfolk.

Dr. T. J. Williams, University.

Dr. A. M. Groseclose, Roanoke.

Dr. L. M. Allen, Winchester.

WALTER REED COMMISSION

Dr. Clarence Porter Jones, *Chairman*, Newport News.

Dr. J. D. Clements, Ordinary.

Dr. James W. Smith, Hayes Store.

TO ARRANGE PROGRAM FOR HEALTH DIVISION OF VIRGINIA WELFARE CONFERENCE

Dr. Basil B. Jones, *Chairman*, Richmond.

Dr. Chas. Fox Graham, Wytheville.

Dr. D. C. Wilson, University.

Dr. W. P. Jackson, Roanoke.

Dr. F. P. Fletcher, Richmond.

PNEUMONIA COMMISSION

Dr. Wyndham B. Blanton, *Chairman*, Richmond.

Dr. Walter B. Martin, Norfolk.

Dr. H. B. Mulholland, University.

Dr. P. S. Smith, Abingdon.

Dr. Harry Walker, Richmond.

TO CONFER WITH STATE BOARD OF NURSES' EXAMINERS

Dr. W. L. Peple, *Chairman*, Richmond.

Dr. Jos. T. Buxton, Newport News.

Dr. Frank S. Johns, Richmond.

Dr. C. B. Morton, University.

Dr. Elisha Barksdale, Lynchburg.

SYPHILIS CONTROL

Dr. Ennion S. Williams, *Chairman*, Richmond.

Dr. R. D. Kimbrough, Norfolk.

Dr. E. E. Barksdale, Danville.

Dr. D. C. Smith, University.

TUBERCULOSIS

Dr. E. C. Harper, *Chairman*, Richmond.
 Dr. Dean B. Cole, Richmond.
 Dr. Frank B. Stafford, Sanatorium.

ADVISORY TO STATE DEPARTMENT OF HEALTH

Dr. W. W. S. Butler, Jr., *Chairman*, Roanoke.
 Dr. J. M. Emmett, Clifton Forge.
 Dr. J. B. McKee, Winchester.
 Dr. Montie L. Rea, Charlottesville.
 Dr. J. M. Lynch, Cape Charles.

REVISION OF CONSTITUTION AND BY-LAWS

Dr. Hunter H. McGuire, *Chairman*, Richmond.
 Dr. Mason Romaine, Petersburg.
 Dr. Frank Farmer, Roanoke.

ADVISORY TO VIRGINIA CANCER FOUNDATION

Dr. R. L. Payne, *Chairman*, Norfolk.
 Dr. R. P. Bell, Staunton.
 Dr. I. C. Harrison, Danville.

INDUSTRIAL HEALTH

Dr. Fred J. Wampler, *Chairman*, Richmond.
 Dr. W. D. Tillson, Richmond.
 Dr. H. T. Hawkins, Waynesboro.

REPRESENTATIVE TO VIRGINIA WELFARE COUNCIL

Dr. Fred P. Fletcher, Richmond.

REPRESENTATIVE TO VIRGINIA STATE-WIDE SAFETY
CONFERENCE

Dr. P. St. L. Moncure, Norfolk, and two members to be appointed by Dr. Moncure from city in which Conference is to meet.

In view of the fact that Dr. C. C. Coleman of Richmond was unable to serve on the Medical Economics Committee, I have named Dr. Carrington Williams of Richmond as a member of this Committee for a term of two years.

ALEX. F. ROBERTSON, JR.,
President, Medical Society of Virginia.

Department of Clinical and Medical Education of the Medical Society of Virginia

Pediatrics.

Seventeen circuits have now been held in postgraduate courses in Pediatrics in Virginia. The last course held included the counties of Alleghany, Botetourt and Rockbridge. Doctors from Bath County attended some of the meetings at convenient centers. The places of meeting were Fincastle, Clifton Forge, Covington and Lexington. The following doctors attended one or more meetings:

CLIFTON FORGE

| | |
|-----------------------|-----------------------|
| Dr. R. L. Claterbaugh | Dr. B. B. McCutchan |
| Dr. Coyne | Dr. W. McM. Revercomb |
| Dr. M. M. Fleiss | Dr. B. H. Tatum |
| Dr. Hancock | Dr. A. D. Tyree |

COVINGTON

| | |
|------------------|-------------------|
| Dr. E. K. Bowles | Dr. B. R. Hudnall |
| Dr. B. L. Carter | Dr. H. G. Hudnall |
| Dr. W. J. Ellis | Dr. N. B. Jeter |
| Dr. J. H. Gordon | Dr. R. A. Warren |

FINCASTLE

| | |
|------------------|--------------------|
| Dr. S. F. Driver | Dr. L. A. Micou |
| Dr. E. W. Dodd | Dr. W. H. Saunders |
| Dr. J. H. Gordon | Dr. M. S. Stinnett |

LEXINGTON

| | |
|-----------------|--------------------|
| Dr. Burns | Dr. F. L. Thurman |
| Dr. R. P. Cooke | Dr. H. L. Mitchell |

Dr. Jones
 Dr. B. B. Mallory
 Dr. O. H. McClung

Dr. E. P. Tompkins
 Dr. Reid White, Jr.

Plans will soon be made for postgraduate courses in pediatrics to be held in the south central part of the State.

During the week of November 14 by special request Dr. Hightower returned to Giles County to hold some special discussions on infant feeding and to hold consultations with the doctors of the county.

Internal Medicine.

During the last week in October and the first week in November Dr. H. B. Mulholland and Dr. J. Edwin Wood, of the University of Virginia Medical School, conducted four discussions in internal medicine at Wytheville. The full program was outlined in the November issue of THE VIRGINIA MEDICAL MONTHLY.

University of Virginia Clinic.

The graduate medical clinic for the fall will be held at the University of Virginia on Friday, December 2. The morning session beginning at nine o'clock will be devoted to the showing of moving-picture films dealing with various medical topics. The

afternoon session, beginning at two o'clock, will be featured by a discussion of "Recent Advances in Chest Surgery", led by Dr. E. C. Drash, Assistant Professor of Surgery of the University of Virginia Department of Medicine, followed by a clinic on "Chronic Ulcers of the Leg", conducted by Dr. John

Homans, Clinical Professor of Surgery at Harvard University. A report of the program will be included in the next issue.

GEORGE B. ZEHMER,
Executive Secretary.

Proceedings of Societies

The Northern Neck Medical Association

Held its regular fall session on November 3, at Montross. The business and scientific sessions were held in the tavern in Westmoreland State Park and lunch was served by the CCC camp. Papers were read by Drs. Charles R. Robins, R. C. Siersema, and T. D. Jones, all of Richmond.

The following officers were elected for the coming year: president, Dr. Charles Y. Griffith, Machodoc; vice-presidents, Dr. C. Leonard Booker, Lottsburg, and Dr. M. C. Oldham, Kilmarnock; and secretary-treasurer, Dr. Lee S. Liggan, Irvington.

The annual banquet was served at the Virginia Tea Room in Montross.

The next meeting of the Association will be held the fourth Thursday in May in Heathsville.

The Augusta County Medical Society

Held its regular quarterly meeting at the Arcadia Hotel, in Staunton, on November 2, under the presidency of Dr. W. M. Phelps, Staunton. There was a large attendance of both members and guests.

The subject for discussion was "The National Health Program and Medical Care" which was led by Dr. Walter B. Martin, Norfolk, chairman of the Committee on Medical Economics of the State Society. The discussion was opened by Dr. Hugh H. Trout, President-Elect of the Medical Society of Virginia, and others taking part were Drs. A. F. Robertson, Staunton; J. W. Preston, Roanoke; J. L. Hundley, Lynchburg; G. F. Simpson, Purcellville; and Chas. F. Kincheloe, East Falls Church.

Dr. A. F. Robertson, Secretary of the Augusta Society and President of the Medical Society of Virginia, presented the plan for a Medical Survey of Augusta County. This was approved and the following committee appointed: Dr. W. M. Phelps, Chairman; Dr. Robertson; Dr. J. C. Neale, Jr.; Dr. Donald Callier; Dr. Paul Freed; and Dr. W. W. Zimmerman.

The business session was followed with the usual banquet.

The Fourth District Medical Society

Met at the Southside Community Hospital, Farmville, on the afternoon of November 22, at which time the following papers were presented: The Proper Care of Diphtheria and Scarlet Fever by Dr. G. Foard McGinnes; Sulfanilamide Therapy by Dr. Marshall P. Gordon; General Medical Applications of Sulfanilamide by Dr. J. Powell Williams; and Illusive Nature of So-Called Subdiaphragmatic Lesions by Dr. William B. Porter, all of Richmond; Regional Ileitis by Drs. Herbert C. Jones and Allen Barker of Petersburg; and a paper by Dr. W. J. Ozlin of South Hill. A subscription dinner followed the meeting.

Dr. C. V. Montgomery of South Hill is president; Dr. C. E. Martin of North Emporia secretary-treasurer; and Dr. Wright Clarkson of Petersburg chairman of the Steering Committee.

The Roanoke Academy of Medicine

Held its regular meeting on November 7, at which time the following program was presented: Certain Phases of Pediatric Urology by Dr. Hamilton W. McKay, Charlotte, N. C.; Thyroid Deficiency by Dr. K. D. Graves, Roanoke; Available Aid in Collapse Therapy by Dr. J. B. Nichols, Catawba Sanatorium; and A Plan of Hospitalization by Mr. F. W. Bathrop, Jr., Richmond.

Dr. W. W. S. Butler is president of the Academy and Dr. A. C. Davis secretary-treasurer.

Virginia, Maryland and District of Columbia Medical Society.

The Fall meeting of this Society was held in Washington, on November 16, under the presidency of Dr. M. B. Hiden, Warrenton. Rev. Winfred Parsons, Principal of the Postgraduate School of

Georgetown University, was the invited guest and spoke on "The Future of the American Doctor". The remainder of the program was as follows: "Partial Mesenteric Occlusion" by Dr. Jas. A. Gannon; "Urethrography as an Aid in Diagnosis of

Prostatic Disease" by Drs. R. M. Lecomte, Fred O. Coe, and Julian Dion; "Breast Cancer" by Dr. Joseph F. Elward; "General Principles and Treatment of Cerebral Injuries" by Dr. J. Rogers Young; and "X-ray-Pelvimetry" by Dr. J. Bay Jacobs.

News Notes

Symposium on the Glycols.

Although a year has passed since the Elixir of Sulfanilamide incident with its tragic consequences, so far as we are aware there has been no attempt to get together all that is known about the glycols, despite the fact that perhaps no chemicals have been more widely discussed during this period than have certain members of this relatively simple family of compounds.

It has therefore occurred to those responsible for the program of the Pharmacy Section of the American Association for the Advancement of Science meeting to be held in Richmond during Christmas week, that a symposium on the glycols might be arranged that should prove highly informative and attract widespread interest. It is with genuine satisfaction that we are able to announce that plans have now been completed for such a symposium, and if carried through as provided for, will be almost definitive so far as knowledge of the better known glycols is concerned.

The subject will be discussed under four general heads, and the men who have accepted assignments for the symposium are acknowledged leaders in their respective fields. Dr. Frank C. Whitmore, President of the American Chemical Society, will discuss the chemistry of the glycols; Dr. H. O. Calvary, Chief Pharmacologist of the Food and Drug Administration, U. S. Department of Agriculture, will consider their physiological action; Mr. H. B. McClure, of the Carbide and Carbon Chemicals Corporation, will talk on their industrial uses; Dr. A. G. DuMez, Dean of the School of Pharmacy, University of Maryland, and Editor of Pharmaceutical Abstracts, will discuss their pharmaceutical uses.

After these formal papers are presented, a general discussion will be opened by Dr. H. B. Haag, Professor of Pharmacology at the Medical College of Virginia, and Dr. M. G. Milinos of Columbia University, College of Physicians and Surgeons. The

program will be held on Tuesday, December 27, at 10:00 o'clock, in the salon of the Jefferson which is headquarters hotel.

The Program Committee is deeply indebted to Dr. Haag, himself a pharmacist, for much of the work involved in suggesting the subjects, and in choosing the men who will take the leading parts.

WORTLEY F. RUDD.

The Seaboard Medical Association of Virginia and North Carolina

Will hold its forty-third annual meeting at Greenville, N. C., December 6, 7, and 8, under the presidency of Dr. W. I. Wooten of that city. The opening session on the evening of the 6th will be open to the public and will feature addresses by Dr. P. P. McCain of Sanatorium, N. C., and His Excellency, Clyde R. Hoey, Governor of North Carolina. The two days following will be filled with scientific matters, including some twenty odd papers on a variety of subjects. Social entertainments will be ample and the usual large attendance is expected. Dr. Clarence Porter Jones of Newport News is secretary.

Dr. James C. Repass,

Resident pediatrician of the Hospital Division of the Medical College of Virginia 1936-1937, who has been practicing at Lumberport, W. Va., has joined the staff of the Baird-Brewer General Hospital in Dyersburg, Tenn., and will have charge of the pediatric division of the clinic of the hospital.

News from Medical College of Virginia.

Founders' Day of the 101st session will be celebrated on Thursday, December 1, at Monumental Church at twelve o'clock noon. Mr. Virginius Dabney, Editor of the *Richmond Times Dispatch* will speak on "Medicine in a Changing World." The program will be preceded by academic procession from McGuire Hall, including faculty, guests, and students.

A portrait of the late Dr. J. Allison Hodges, Emeritus Professor of Clinical Nervous and Mental Diseases, was presented to the college on November 21, the portrait being the gift of nieces of Doctor Hodges. Dr. Roshier W. Miller will make the presentation and Dr. W. T. Sanger will accept the portrait for the college.

Members of the faculty attending the meeting of the Southern Medical Association at Oklahoma City, Oklahoma, were Dr. Lee E. Sutton, Jr., dean of the school of medicine; Dr. H. B. Haag, professor of pharmacology, and Dr. Porter P. Vinson, professor of gastroscopy, esophagoscopy and bronchoscopy. Dr. Vinson discussed Dr. Jay M. Arena's paper on Lye Poisoning and Stricture of the Esophagus. Dr. Haag is chairman of the section on medical education.

Armistice Day was observed at twelve o'clock noon, with appropriate exercises at Monumental Church, in conjunction with the veterans of Base Hospital 45. Dr. Stuart McGuire and Dr. Ben Lacy were the speakers on this occasion.

News from University of Virginia, Department of Medicine.

Dr. George M. Lawson attended the meetings of the American Public Health Association in Kansas City, Missouri, on October 25 to 28. He presented a paper in the symposium on whooping cough entitled Immunity Studies on Whooping Cough.

On October 18, Dr. H. E. Jordan delivered the first lecture in the symposium on blood arranged under the auspices of the Richmond Academy of Medicine. He spoke on the subject of the Histology and Embryology of the Blood.

The new addition for the care of neuro-psychiatric patients at the University of Virginia Hospital was begun on October 5. The work is financed in part by the Federal Emergency Administration of Public Works. The total expenditure will be approximately \$150,000.

Dr. J. Edwin Wood conducted a Postgraduate Course in Internal Medicine in Wytheville, on October 27. During the afternoon he spoke on the subject The Treatment of Congestive Heart Failure with Especial Reference to Diuresis, and at the evening session he discussed Acute Nephritis—Treatment and Outlook.

On November 3, Dr. H. B. Mulholland conducted a Postgraduate Course in Internal Medicine in Wytheville. At the afternoon session he presented a paper on Diseases of the Thyroid, Suprarenal and Parathyroid Glands—Classification, Diagnosis and Treatment, and during the evening session he spoke on the subject The Modern Conception of Deficiency Diseases and Their Treatment.

Dr. Oscar Swineford, Jr. addressed the South Carolina Otolaryngological Society, meeting in Columbia, South Carolina, on November 1, on the subject of Observations on Nasal Allergy. On November 17 and 18 he presided over the Allergy Section of the Southern Medical Association which met in Oklahoma City, Oklahoma.

The Clinical Society of the New York Polyclinic Medical School and Hospital

Will hold its next meeting on Monday evening, December 5, 1938. The program is as follows:

Case Report: "Carcinoma of the Male Breast", George Shetter, M.D.

Papers of the evening: 1. "End Results in Tuberculosis of Bone" by Mather Cleveland, St. Luke's Hospital, New York City; Discussion to be opened by David M. Bosworth, M.D.

2. "Physiology of Vitamins" by George R. Cowgill, M.D., Ph.D., Professor of Chemistry, Yale University. Discussion to be opened by Frank D. Carroll, M.D., Martin G. Vorhous, M.D. and Norman Jolliffe, M.D.

3. "Intranasal Sinus Operations" (illustrated by motion pictures) by Lee M. Hurd, M.D., New York Polyclinic Hospital.

Members of the medical profession are invited to attend the programs and lectures presented at the Polyclinic Hospital.

News Notes from Duke University School of Medicine.

On October 13, 14 and 15, Duke University School of Medicine held, in connection with the University Centennial Celebration, a Symposium on Medical Problems, the following subjects being discussed: The Future of American Medicine and Diseases of Special Interest to Physicians in the Southern States.

The following appointments were made recently to the Faculty of the School of Medicine: Dr. Harold W. Brown, Professor of Preventive Medicine and Public Health; Dr. James P. Hendrix, Associate

in Medicine, and Dr. Hans Neurath, Associate in Biochemistry.

Dr. Edward Valentine Jones, Jr.,

Formerly located at Arlington, is now associated with the Logan County Health Department, Logan, W. Va.

Dr. Channing Glenn,

Medical College of Virginia, class of '33, has located at Elizabethtown, N. C., where he is associated with Dr. E. C. Bennett, also an alumnus of this College. Dr. Glenn has been in Petersburg for several years.

Dr. R. L. Phipps,

Physician in charge of the Dickenson County Hospital, Clintwood, attended the Second Annual Assembly of the United States Chapter of International College of Surgeons, which met in Philadelphia, October 13 and 14.

Birth.

Dr. and Mrs. Thomas M. Winn of Covington are receiving congratulations upon the birth of a son, Thomas Meredith, Jr., on October 30.

Dr. Joseph H. Low,

Class of '36, University of Virginia, Department of Medicine, after two years as intern in the Virginia Mason Hospital and Clinic in Seattle, Wash., has located at King George where he is engaged in general practice.

Association of the American Medical Colleges.

At the annual meeting of this Association, held in Syracuse, N. Y., the latter part of October, the following officers were elected: President, Dr. Willard C. Rappleye, Dean of Columbia University College of Physicians and Surgeons, New York; president-elect, Dr. Russell H. Oppenheimer, Emory University, Atlanta, Ga.; vice-president, Dr. Waller S. Leathers, Vanderbilt University, Nashville, Tenn.; secretary, Dr. Fred C. Zapffe, Chicago; and treasurer, Dr. A. C. Bachmeyer, University of Chicago.

Married.

Dr. Edgar Clay Harper and Mrs. Dorothy Seaman Albright, both of Richmond, October 15.

Dr. Ernest Perry Buxton, Jr., and Miss Anna Heath Williams, both of Richmond, November 5.

Dr. William Eugene Apperson, of Blue Ridge

Sanatorium, and Miss Ellen Cosby Carter, of Halifax, October 29.

Dr. Henry Clay Smith, Boyce, and Mrs. Mary Martin Singer, of Clarke County, October 25.

Dr. George Cooper, Jr., of the University of Virginia, and Miss Juliet Foster Paine of Charlottesville, November 24.

Dr. A. Fraser Lapsley, Badin, N. C., and Miss Janie Hall, Elkin, N. C., November 12. Dr. Lapsley is a member of the class of '33, Medical College of Virginia.

Neuropsychiatric Society of Virginia.

The Fall meeting of the Society was held at the Colony, Lynchburg, on October 28, under the presidency of Dr. Frank H. Redwood, Norfolk. The following scientific program was presented: The Use of Dilantin in the Treatment of Cases of Epilepsy by Drs. O. M. Weaver, D. L. Harrell, Jr., and G. B. Arnold; A Brief Review of the First Thousand Cases Eugenically Sterilized at the State Colony by Dr. G. B. Arnold; The Institutional Psychologist by Mr. John N. Buck; and Chronic Encephalitis by Dr. D. L. Harrell, Jr.

Dr. Matthew James Walter White, Jr.,

Has located in Luray, where he will be engaged in the general practice of medicine and surgery. He received his medical degree from the University of Virginia in 1927, following which he served an internship at the Emergency Hospital in Washington and residencies at several New York hospitals. From 1929 to 1935, Dr. White was medical missionary for the Philippine Islands. He was then physician-in-charge of the U. S. Government Hospital at Fredriksted, Virgin Islands.

Dr. W. E. Vermilya,

Recently of Big Rock, is now located in Clifton Forge, where he is engaged in general practice.

Dr. J. L. Hundley,

Formerly with the State Health Department at Wytheville, is now assistant resident with Dr. D. C. Smith in the Department of Dermatology and Syphilology of the University of Virginia Hospital.

Personnel Notes from the State Department of Health.

Dr. Earle C. Gates has been appointed Health Officer of the Washington-Bristol Health Department, the headquarters of which are in Bristol. He

succeeds Dr. M. I. Shanholtz who resigned to accept a position in Oklahoma.

Dr. Paul W. Bowden has been appointed Assistant Health Officer of the Arlington County Department of Health and Welfare of which Dr. R. G. Beachley is the Director. He succeeds Dr. Edwin V. Jones, Jr., who has resigned to accept a position elsewhere.

Dr. Linwood Farley has been temporarily assigned to serve as Health Officer of the Russell-Tazewell Health District to fill the vacancy caused by the resignation of Dr. S. J. Beeken. A permanent appointment will be made in the near future. Headquarters are located at Richlands.

The Richmond Pediatric Society

Met on November 3 in the Richmond Academy of Medicine Building. Dr. John C. Gittings, professor of pediatrics in the School of Medicine of the University of Pennsylvania, was the guest speaker. His address was "The Role of Research in Relation to Pediatrics".

Dr. C. L. Outland,

Medical director of the Richmond schools, has been elected president of the American School Health Association for 1940. This Association, which has approximately 2,000 members, held its annual meeting in Kansas City, Mo., the latter part of October.

Dr. James E. Smith,

Petersburg, has been appointed City Physician, succeeding Dr. Channing Glenn, who has moved to North Carolina.

Dr. Elmer N. Shockley,

Formerly of Bassetts, is now located at Ashburn.

Hospital for Drug Addicts.

The U. S. Public Health Service has opened the second hospital for drug addicts in this country, at Fort Worth, Texas, with a formal dedication held on October 28. The hospital, built at a cost of \$4,000,000, covers 1,140 acres and includes an administration building, a clinical ward building, a maximum custody ward, personnel residences, and maintenance structures. A prolonged treatment building for the more advanced cases of addiction will be ready in 1939. About 300 beds have already been set up for patients.

Dr. Wright Clarkson,

Petersburg, was an invited guest of the Vermont Medical Society at their annual meeting in October. He delivered an address on "What Every Doctor Should Know About Cancer of the Cervix Uteri".

Medical Profession Honored in the Christmas Seals of 1938.

Three physicians who rendered signal service to the cause of tuberculosis diagnosis and treatment are honored in each sheet of 100 Christmas Seals distributed by the Virginia Tuberculosis Association through its one hundred county and eighteen city organizations. Three of the corner seals show portraits of the following doctors:

René Theophile Laennec, the French physician who in 1819 invented the stethoscope;

Robert Koch, the German discoverer of the tubercle bacillus, who isolated the germ in 1882, and

Edward Livingston Trudeau, the American physician who in 1885 established modern sanatorium treatment of tuberculosis in the United States.

The fourth portrait is that of Einar Holboell, the Danish postmaster who conceived the idea of raising money for tuberculosis by the sale of Christmas Seals.

Last year \$101,587 was realized from the seal sale in Virginia, and these funds expended for sanatorium treatment of indigent patients, X-rays for diagnosis, nursing service, pneumothorax treatments, rehabilitation of arrested tuberculous patients and for campaigns to educate the public as to the nature and treatment of tuberculosis. In these campaigns the need of consulting physicians before development of symptoms was pointed out, and explanation given as to the importance of regular and thorough medical examinations to prevent the hazards of delayed diagnosis.

Last year Virginia lost 1,787 people from this preventable and curable disease and the Virginia Tuberculosis Association calls attention to the fact that it is still the leading cause of deaths between the ages of 15 and 45—years of greatest promise and usefulness.

Dr. Hal Davis,

Roanoke, recently returned from Boston where he took postgraduate work in Heart Disease under Dr. Paul White at the Massachusetts General Hospital.

Dr. S. J. Beeken

Has returned to Christiansburg, where he will be engaged in general practice. He has recently been with the State Health Department in Richlands.

Dr. Edwin J. Palmer

Has returned to Gardner, Mass., where he is connected with the Gardner State Hospital. He has recently been at Clay, Ky. Dr. Palmer is a graduate of the Medical College of Virginia, class of '34.

Dr. Joseph Horgan,

Washington, D. C., delivered his Presidential Address before the Washington Medical and Surgical Society on October 24, his subject being "The Surgical Consideration of the Redundancies of the Colon".

Dr. Thomas M. Winn,

Covington, was certified by the American Board of Ophthalmology at the examinations held in Washington in October.

American Public Health Association, Southern Branch.

Dr. J. N. Baker, Montgomery, Ala., was elected President of the Southern Branch of this Association at its meeting in Oklahoma City in November, and Dr. P. E. Blackerby, Louisville, Ky., secretary-treasurer.

Dr. D. Hunter Marrow,

After spending the summer at his home in Boynton, has returned to Daytona Beach, Fla., for the winter and early spring months.

Dr. Thomas Wheeldon,

Richmond, was recently elected to fellowship in the Society for Physical Medicine.

The Fifth Postgraduate Course in Ophthalmology and Otolaryngology

Is to be at the University of Virginia on December 6, 7, 8 and 9. This series of lectures and clinics is sponsored by the University of Virginia and will be in the amphitheater and operating rooms of the School and Hospital. The lecturers and clinicians will be outstanding men in these specialties. There will be morning and afternoon sessions with luncheon and round table discussions between, and an informal dinner will be given at Farmington Country Club on Wednesday, December 7, at 6:30 p. m., for all members and guests of the clinic.

The fee for the entire course is \$25.00 or \$15.00 for either part. Applications for registration should be sent to Dr. Fletcher D. Woodward, Box 1685, University, Virginia, with a deposit of \$5.00 to be applied to the registration fee.

Southern Medical Association.

A most excellent meeting of this Association was held in Oklahoma City, the middle of November, under the presidency of Dr. J. W. Jervey of Greenville, S. C. There was a registered attendance of 2,260 doctors, besides 585 ladies, exhibitors and visitors. Many affiliated societies, fraternities, and

alumni held meetings and reunions at this time. The scientific and technical exhibits were of a high order.

The following Virginia doctors were registered:

Dr. Vincent W. Archer, University.
Dr. James W. Anderson, Norfolk.
Dr. Wright Clarkson, Petersburg.
Dr. C. E. Conrad, Harrisonburg.
Dr. T. B. Ely, Jonesville.
Dr. J. A. Gilmer, Big Stone Gap.
Dr. H. B. Haag, Richmond.
Dr. Fred M. Hodges, Richmond.
Dr. A. A. Houser, Richmond.
Dr. G. Foard McGinnes, Richmond.
Dr. Thos. W. Murrell, Richmond.
Dr. Allen W. Pepple, Richmond.
Dr. Chas. H. Peterson, Roanoke.
Dr. M. Pierce Rucker, Richmond.
Dr. D. C. Smith, University.
Dr. Oscar Swineford, University.
Dr. Lee E. Sutton, Richmond.
Dr. Porter P. Vinson, Richmond.

Memphis, Tenn., was selected as the 1939 place of meeting and the following officers were elected: President, Dr. Walter E. Vest, Huntington, W. Va.; President-elect, Dr. Arthur T. McCormack, Louisville, Ky.; Vice-presidents, Dr. Henry H. Turner of Oklahoma City and Dr. William Hibbitts, of Texarkana, Tex.-Ark.; Secretary-Manager, Mr. C. P. Loranz, and Editor of Journal, Dr. M. Y. Dabney. Both of the latter of Birmingham were re-elected. The executive committee includes Dr. William Thornwall Davis of Washington, D. C., Dr. Vincent W. Archer of University, Va., and Dr. Alphonse McMahon of St. Louis, Mo.

Dr. Marion S. Love,

Who has been at St. Elizabeth's Hospital in Washington, D. C., has returned to the University of Virginia, where he is connected with the Department of Neurology and Psychiatry. He is a graduate of the University in the class of 1936.

Lt.-Comdr. J. F. Terrell, (MC) U. S. Navy,

Has advised that his mailing address is now *U. S. S. Northampton*, care of Postmaster, San Pedro, California.

The United States Civil Service Commission

Announces open competitive examinations for Junior Medical Officer (Rotating Internship) and Junior Medical Officer (Psychiatric Resident). Entrance salaries are \$2,000.00 a year. Applications must be on file not later than December 13, and the necessary forms may be obtained from the Secretary, Board of U. S. Civil Service Examiners, at any first-

class post office, or from the U. S. Civil Service Commission, Washington, D. C. The exact title of the examination desired should be stated in the application form.

For Sale—

Doctor's office equipment, consisting of examining table, aspirator, sterilizer and instrument table, detentomic scales, baby scales, and small instruments for tonsil work and obstetrics. Also medicines and other equipment. Address Mrs. H. H. Green, Hillsboro, Va. (Adv.)

Position Wanted—

Contract or assistantship practice. Age forty, Gentile, married, sober and good mixer, class "A" graduate. Good reasons for seeking change. References furnished and required. Strictly ethical and member of County, State and A. M. A. Address "X", care this JOURNAL. (Adv.)

Home and School for "Exception" Children.

The Thompson Homestead School, located at Free Union, near Charlottesville, is especially adapted for the shy, nervous, retarded or unsocial child. Enrollment limited. For detailed information, write Mrs. J. Bascom Thompson, Principal, Free Union, Va. (Adv.)

Home for Convalescences.

A home for the care and treatment of chronic aged and convalescences has been opened at Arrington, Nelson County, Virginia, under the direction of Dr. and Mrs. Fred M. Horsley. Information upon request. (Adv.)

Obituary Record

Dr. John Henry Neff,

Nationally known scientist and professor of urology at the University of Virginia, died November 8. He was born in 1887 and received his degree in medicine from the University of Virginia in 1910. Dr. Neff had been with the University Hospital since his graduation, serving as intern, house surgeon, associate professor of surgery, associate professor and professor of urology, being named to the latter position in 1916. He held membership in many organizations, among them being the Council of the American Association of Genito-Urinary Surgeons, Phi Beta Kappa, Sigma Xi, Pi Kappa Alpha, Phi Rho Sigma, Alpha Omega Alpha, and the Colonnade Club of Charlottesville. Dr. Neff was also an active

member of the Medical Society of Virginia and for a number of years served on its Publication and Program Committee. Besides his wife, he is survived by two sons and a daughter.

Dr. Hunter Boyd Spencer,

Prominent roentgenologist of Lynchburg, died November 12, after an illness of three years. He was a native of King and Queen County and fifty-five years of age. Dr. Spencer received his medical degree from the former University College of Medicine, Richmond, in 1907. He had practiced in Lynchburg for the past ten years, having gone there from Staunton. He was a member of a number of medical associations and had been an active and interested member of the Medical Society of Virginia for thirty years. He is survived by his wife and four children.

Dr. Norman Walter File,

Lynchburg, died November 4, having had a stroke of paralysis several days before. He was a native of Buckingham County and fifty-four years of age. Dr. File graduated from the former Baltimore Medical College in 1908. He had practiced in Lynchburg since 1919 and specialized in eye, ear, nose and throat work. He was a Mason and a member of the Medical Society of Virginia. His wife survives him.

Dr. Wellford Bohannon Lorraine,

Well known Richmond homeopath, died November 12, following a brief illness, although he had been in failing health for several months. He was fifty-eight years of age. Dr. Lorraine studied at the Medical College of Virginia and graduated from the Hahnemann Medical College and Hospital in Chicago in 1906. He was prominent in fraternal and church activities, and was a former president of the Southern Homeopathic Medical Society. His wife and two daughters survive him.

Dr. Daniel Trigg,

Bristol, died November 4, after a brief illness. He was sixty-one years of age and graduated from the Medical College of Virginia in 1903. Dr. Trigg was formerly a member of the Medical Society of Virginia. His wife survives him.

Dr. Humie Lee Horton,

Formerly of Richmond, died in Raleigh, N. C., October 27, following a brief illness. He was a native of North Carolina, forty-one years of age, and a graduate of the Medical College of Virginia in 1923. Dr. Horton is survived by his wife and two children.

RECENT ADVANCES IN THE SCIENCE OF NUTRITION

IV. Some Accomplishments of Vitamin D Research

● By 1932, many of the basic facts concerning Vitamin D had been clearly established (1). At that time, the International system of denoting vitamin D unitage had not been universally adopted. However, the antirachitic potencies of a wide variety of biological materials had already been explored; the need for standardization of assay methods was appreciated; the minimum requirement of infants and children for vitamin D had been estimated; and the probable "multiple" nature of the vitamin definitely indicated. Since 1932, the importance of vitamin D in human nutrition and the challenge of the many unanswered questions regarding this factor have served to stimulate research both in the clinic and in the laboratory. It is of interest to note some of the outstanding advances made in our knowledge of vitamin D which the past six years have brought. It is now known that at least ten different sterol derivatives are capable of exhibiting the physiologic properties of vitamin D. Of these, only two may be considered of prime importance as far as practical application in human nutrition is concerned, namely, the activation products of ergosterol and 7-dehydro-cholesterol. The remaining forms are of considerable theoretical importance in that their identification has completely established the multiple nature of vitamin D (2). Further research has also defined more closely not only the vitamin D requirements of normal infants and children, but also of premature infants and those peculiarly susceptible to rickets. Apart from conditions of pregnancy and lactation, the possible re-

quirement of the human adult for vitamin D is still not known (3). The International system of expressing vitamin D potency has been universally adopted; bioassay methods have been standardized (4); and last but not least, a high degree of standardization has been attained, not only in regard to the antirachitic potency of Vitamin D preparations, but also as to the extent to which the vitamin D contents of certain foods should be increased by the various means available (3).

While some foods, including some canned foods of marine origin, are valuable food sources of vitamin D (5), no combination of common foods—as they occur naturally—can supply the demands of the infant and child for the antirachitic factor. Although there is no reason as yet to believe that the normal adult requirement for vitamin D is not largely fulfilled by a varied diet of protective foods, it is definitely known that the infant and child dietaries must be supplemented with or fortified by vitamin D.

It is in the formulation of basic diets for either infants or adults that commercially canned foods should prove especially valuable. Among the great variety of American canned foods are included special foods for use in child and infant feeding which, when properly supplemented or fortified, should meet the nutritive demands of those stages of life. For the normal human adult—whose diet hardly requires special supplementation—there are a large number of canned foods available which readily permit formulation of a varied diet of the so-called protective foods.

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(1) 1932. J. Amer. Med. Assn. 99, 215 and 301.

(2) J. Amer. Med. Assn. 110, 2150.

(3) Ibid. 110, 703 and 1179.

(4) 1936. U. S. Pharmacopeia, XI Decennial Revision.

(5) 1935. J. Home Econ. 27, 658.

1933. Science 78, 368.

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the forty-third in a series, which summarize, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.



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HOW MUCH SUN

Does the Baby Really Get?

THIS BABY has been placed in the sunlight. (1) The mother discovers the baby is blinking, so she promptly shields its eyes and much of its face from the light. (2) Since the baby's body is covered, the child will then be getting only reflected light or "sky-shine" which is only 50% as effective as direct sunlight as an antiricketic agent (Tisdall). (3) Even if the baby were exposed nude, it has never been determined how much of the ergosterol of the skin is synthesized by the sun's rays (Hess). (4) Time of day also will affect the amount of sunshine or sky-shine reaching this baby's face. At 8:30 A. M., average loss of sunlight, regardless of season is over 31% and at 3:30 P. M. is over 21%. (5) Direct sunlight, moreover, is not always 100% efficient. U. S. Weather Bureau maps show that percentage of possible sunshine varies in different localities, due to differences in meteorological conditions. (6) In cities, smoke and dust, even in summer, are other factors reducing the amount of ultraviolet light.



While Oleum Percomorphum cannot replace the sun, it is a valuable supplement. Unlike the sun, it offers measurable potency in controlled dosage and does not vary from day to day or hour to hour. It is available at any hour, regardless of smoke, season, geography or clothing. Having 100 times the vitamins A and D content of U.S.P. cod liver oil (U.S.P. minimum standard), Oleum Percomorphum can be administered in drops, which makes it an ideal year-round antiricketic. Use the sun, too.

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FOR GREATER ECONOMY, the 50 cc. size of Oleum Percomorphum is now supplied with Mead's patented Vacap-Dropper. It keeps out dust and light, is spill-proof, unbreakable, and delivers a uniform drop. The 10 cc. size of Oleum Percomorphum is still offered with the regulation type dropper.



OLEUM PERCOMORPHUM

Ethically Marketed — Not Advertised to the Public

MEAD JOHNSON & COMPANY, EVANSVILLE, INDIANA, U. S. A.

Please enclose professional card when requesting samples of Mead Johnson products to cooperate in preventing their reaching unauthorized persons.



The New York Academy of Medicine

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